

THE AMERICAN BEE JOURNAL

Devoted Exclusively to Bee Culture.

VOL. XV.

CHICAGO, ILLINOIS, MARCH, 1879.

No. 3.

Contents of this Number.

Editor's Table.

Editorial Items	97 to 102
Past—Present—Future	98
Condense your Articles	98
New Flat-Bottomed Comb Foundation	98
New Arrivals at Our Museum	99
Caldwell's Hive Register	99
Outman's Modest Hive	99
Valentine's Italian Bee-Yard	99
Bingham's Cold-Blast Smoker	99
Mr. W. J. Davis' Bee-Yard	99
E. Armstrong's Centennial Hive	100
F. A. Snell's Eclipse Hive	100
Triangular Comb-Basket	100
Cleansing Combs of Diseased Bees	101
Another Large Export of Honey	102
How to Fasten Wired-Foundation to Frames	102

Foreign Notes:

Letter from Dr. Dzierzon	103
" " L'Abbe L. DuBois	103
An Old Linden Tree	103
L'Apiculture in Italy	103
Premiums at the Paris Exposition	103

Correspondence:

Compelling Bees to build Worker Comb	104
Two Old Books on Bee-Culture	106
Adulteration Again—The Bee Mole	107
Another Bee Enemy—the Bee Mole	108
Preparing Bees for Winter	109
Description of Winter Bee-House	109
Honey Boards and Prize Box Holder	109
Electric Alarm for the Apiary	110
About Queen Rearing, &c.	111
Are these Queens Pure?	111
Comb Foundation—A Grand Success	112
Description of the Hives I use	113
Dividing Bees	115
A Home Market for Honey	115
Hives and Wintering Bees	116
About "Dollar Queens"	116
Moving Bees in Cold Weather	117
How I make Shipping Crates	118
My Method of Wintering Bees	118
Grape Sugar as Food for Bees	118
Chips from Sweet Home	120
Queens Mating in the Hive	121
The Use of Glucose for Adulteration	121
The Transportation of Bees	122
Hive Register	122
Queens Duplicating Themselves	123
Early Spring Dwindling	123
Glucose	124

Our Letter Box:

A. W. Hale, W. Lassing, Simon Humfield, Jr., S. N. Replogle, R. C. Taylor, H. H. Flick, M. M. Camp	126
F. Hardinger, R. M. Hastings, W. M. Rogers	127
E. R. Douglass, Moosh Amiel, F. S. Thorington, F. C. Hazen, F. Della Torre	128
Lewis T. Colby, M. L. Dorman, E. Dorsch, M. D. L. M. Roberts, C. H. Hancock, H. M. Noble, C. O. Ball, H. C. Wilde, Alex. Wilder	129
E. W. Chandler, Moses Bailey, Frank A. Ticknor, Hiram Cralz, F. B. Threlkeld, N. Davis, Isaac F. Plummer	130
Jerome Wiltse, L. M. Howard, John H. Smith, F. B. Campbell, A. J. Cook, W. J. Davis	131
E. C. Jordan, Jno. F. Eggleston, F. Hardinger, E. W. Eckman, G. M. Hawley, D. Kepler, W. Martin	132

Editor's Table.

☞ Wisdom says, procure hives and boxes for the next season, now,

☞ In the New York and Minnesota Legislatures, bills have been introduced against the adulterations of sweets, and many State Legislatures have passed resolutions instructing their Members of Congress to use their influence in favor of enacting a United States law against general adulteration.

☞ Mr. A. F. Moon reports that he has tried comb foundation made upon tin-foil, and it has been a success. We have received a sample of it, but think it would be rather heavy. Still Mr. M., says that he has frames, two-thirds filled with it, that now have brood, and sagging is out of the question. Inventive genius is at work.

CLEANSING COMBS.—The dysentery has been quite severe, in some sections, during the past winter, and many inquiries similar to the following from "W. M.," have been received:

What is the best plan of cleansing combs on which bees have died of dysentery? Will it be safe to use them for other colonies?

The fecal matter found on the combs is soluble in water. They may be cleansed by washing, using a soft cloth or sponge. If placed in a very damp place for a while, or out in a light rain, it will assist the cleansing operation. The disease is not contagious, and there need be no fear of using the combs again.



Past—Present—Future.

THE AMERICAN BEE JOURNAL is now in its fifteenth year. For a little less than one-half of that time it was under the management of our distinguished predecessor—the late Mr. SAMUEL WAGNER. During his life though he was nearly three-score-and-ten years of age when the JOURNAL sprang into life, it achieved an enviable reputation. To his ripe scholarship, sagacity, wisdom, and varied information pertaining to the theory and practice of scientific bee culture, must be attributed the influence, and position which the BEE JOURNAL attained! This character was maintained for nearly three years by his son, Mr. GEORGE S. WAGNER, and the Rev. W. F. CLARKE.

For over five years we have endeavored to retain its former influence, improve its typographical appearance and enlarge its capacity, until now the number of its pages are nearly doubled, while its matter is more than double in quantity, and yet the price has been reduced 25 per cent.

If we may give any credence to the opinions of its patrons, many of whom have taken every number since it was started, it, to-day, stands without a rival, not only in the quality of its matter, for all the prominent apiarists contribute their best thoughts and practical hints to its pages—but also as to the number of its readers and patrons.

Flattering as this may be to its friends, it is alike discouraging to its competitors. One of these, in its last issue, without provocation, and wholly prompted by its jealousy, publishes several unkind remarks and spiteful insinuations about the JOURNAL and its managers.

We shall always cheerfully answer arguments, and reply to gentlemanly queries, but we will not lower the standard of THE AMERICAN BEE JOURNAL enough to reply to calumny and malignity. We shall not give the benefit of our large circulation to such persons, by repeating their unmanly attacks in order to refute them. Such being born in jealousy and reared in malignity, may die in obscurity, for aught we care. Having given no cause for such attacks, we shall not turn from our legitimate work long enough to notice them!

Instead of marring our pages with personal strife and petty controversy, we shall pursue a steady and undeviating course—laboring to make THE AMERICAN BEE

JOURNAL the best exponent of the science and art of bee culture.

This being the course we intend to pursue in the future, our correspondents are also requested to omit all personal controversy. Use strong arguments, give battle to false theories, pour red-hot “shot and shell” into the strongholds of error and corruption, but shun personal bickerings and unmanly assaults. Thus shall THE AMERICAN BEE JOURNAL “go on from conquering to conquer”—driving false theories and antiquated notions from the theory and practice of bee culture, substituting in their place, scientific methods and modern practice.

CONDENSE YOUR ARTICLES.—All want to have their articles and letters appear in the BEE JOURNAL, and we are glad to have them feel so, but really we cannot find room if they persist in writing such long ones. So many subjects of vital importance are now up for discussion and *both sides* must be heard, that if the writers do not condense, we are obliged to do it for them. We have had to use the “pruning knife” pretty freely in this issue, and have been compelled to omit the “Convention” department entirely, to give place to correspondents who have been waiting to be heard for several months. We are glad that so much interest is manifested, and hope *all* will be patient with us, for we are doing the very best we can to accommodate them. Had we a hundred pages this month, we could have filled them full of interesting matter. Therefore, friends, be admonished; “boil down” your thoughts, and condense your articles till they appear like “apples of gold in pictures of silver.”

☞ We have received a sample of what all will say is *thin* comb-foundation, when we state that it is 18 square feet to the pound. It is too thin for anything but to show just what can be done by the new flat-bottomed-cell machines. Mr. Van Deusen says he has three of the machines all fixed to run by water or steam power successfully. It is beautifully made and is really “as pretty as a picture.”

New Arrivals at our Museum.

We have quite a number to notice, and so will make a chapter of it.

CALDWELL'S HIVE REGISTER.

This tells at a glance what the bees are doing. It consists of a card $5\frac{1}{2} \times 7$ inches to put on the side of the hive and pins may be put into it to indicate anything desired to be remembered. For description see page 122.

OATMAN'S MODEST HIVE.

This has been improved and a sample of the new hive has arrived at our Museum. The accompanying cut shows



its form and style. It uses the Gallup frames (B), with side-storing cases (A, C).—and either another story with 7 cases, each to hold 3 prize boxes, or a comb honey rack, as seen on the last page of the cover of this JOURNAL. It is very similar to the hive used by Mr. G. M. Doolittle and Prof. Cook.

DIRECT-DRAFT, COLD-BLAST SMOKER.

Mr. Bingham has sent us a sample of his Smoker as he makes it for the coming season. He calls it the "Bingham direct-draft, cold-blast combination." Mr. Corey, of California, has suggested that cold smoke is more soothing in its effects on the bees, than that ordinarily produced by a blast through the fire in

the Smoker. We very much doubt if any one can tell the difference, however, as it cools so quickly. We have tried it and an ordinary one side by side, and three persons, blindfolded, sometimes selected the smoke from one as the hottest, and sometimes the other, when the smoke was blown into their faces from each smoker alternately. If there should prove to be any advantage in the idea, Mr. Bingham has adapted it to his smoker, in an excellent manner, giving a lining to the stove, where most exposed to the heat, thus adding to its durability.

The smoker, we are glad to notice, has been strengthened, and improved in all its parts. It is a pleasure to note that whatever improvements the smoker may undergo Bingham maintains its "standard of excellence."

VALENTINES' ITALIAN BEE YARD.

Valentine & Son, of Carlinville, Ill., have gotten up a wood cut of their residence and bee yard, which our readers will be interested in viewing. The cut



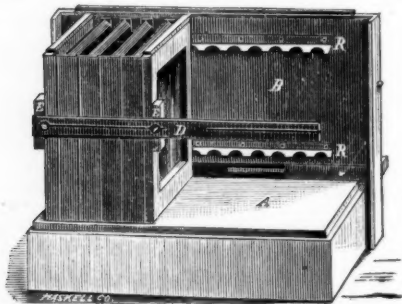
shows a house apiary to the left and a honey house in the center. They are breeders of Italian bees and high-class Poultry.

LITHOGRAPH OF DAVIS' BEE YARD.

This is a nice view of Mr. W. J. Davis' residence and bee-yard, at Youngsville, Pa. It makes a very attractive appearance, and its owner ought to be "a happy man."

ARMSTRONG'S CENTENNIAL HIVE.

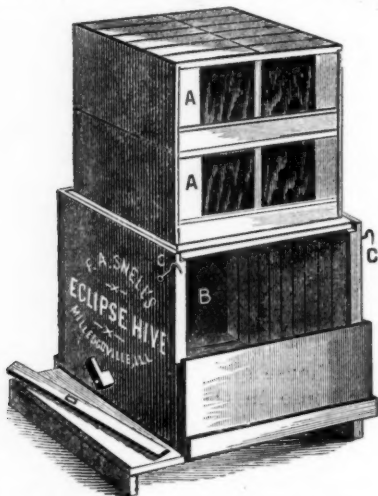
This has been improved and a new sample is received at the Museum. It is the Huber type of hive, and is illustrated on page 140. The following cut shows how it may be contracted to 3 or more frames. It is provided with a



comb honey rack, containing 18 prize boxes, with separators. The back and sides come off in one piece to admit of manipulation.

F. A. SNELL'S ECLIPSE HIVE.

This hive contains 10 American frames, 12x12 inches, and can be used for a one or two story hive as desired.



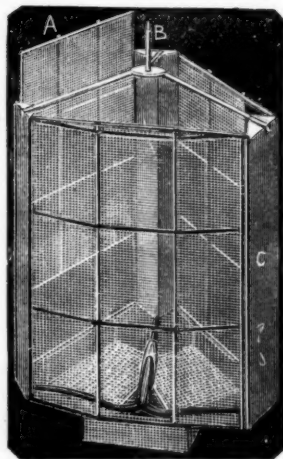
The cut shows the manipulating side which may be fastened with hooks (C) and two tiers of boxed frames for comb honey. It does not contemplate the use of separators, that are now thought to

be indispensable. Mr. Snell gives the following description of it:

"The above cut gives a view of the Eclipse Bee Hive, with movable side removed from lower story, and the body of the second story removed, giving a view of the boxes, which are held in a neat case having a movable glass side, which facilitates greatly the removal of boxes when filled with honey, and also affords an easy way of telling when the boxes are filled, ready to be taken off."

TRIANGULAR COMB BASKET.

This is an arrangement to admit three frames, instead of two or four, in an extractor, and was gotten up by Messrs. Wagner & Bourne, of Chicago. Mr.



Coffinberry has made arrangements to use it in the Excelsior Extractor, and now, it is furnished with a comb-basket for either two or three frames at the same price. It has no center rod running through it, and the sides of the basket (A) are movable, and can be taken out and replaced instantly.

MISCELLANEOUS.

D. S. Given, Hoopston, Ill., has sent us a bee feeder made out of an old oyster can. Being easily made, and costing nothing, they are certainly worth all they cost.

W. O. Carpenter, Lawrence, Kan., has sent us his Combination Bee Feeder. It is adapted for hives having a honey board over the combs with a 7 inch cap. The holes of the feeder correspond with the center hole of the honey board, and just admit the trade size of the quinine bottle for liquid food, and the box holds a sufficient quantity of candy as dry food.

I. C. & H. P. Sales have sent us a sample of the Dunham Comb Foundation. The machine makes very thin bases to the cells and high side walls. The sample sent is a very good article, and quite a credit to the inventor—a woman!

Mr. C. G. Ferris, of Mohawk, N. Y., has sent us a smoker made with a Bingham bellows, and the Quinby tube, fastenings to the bellows and valve. There is no new principle about it.

We have some queen cages, &c., but must defer their notice till our next issue, for want of room.

Mr. G. M. Doolittle has sent in nearly 300 subscriptions for the BEE JOURNAL for 1879—the largest club yet.

"THE BLESSED BEES," that interesting work by John Allen, is kept for sale at this office, and will be sent postpaid for \$1.00.

We have ordered some of the finest queens to be obtained in Italy, and expect to be able to fill orders in May for them. Price, \$5.00. Selected ones \$6.00.

A petition against adulteration of food, with several thousands of signatures has been forwarded to Congress from Chicago, but unless there be an extra Session, we fear it will be of no use for this year.

From the last number of *Gleanings* we conclude that Novice will soon place himself in line against the use of glucose. The *Bee-Keepers' Magazine* is out squarely against its use, and we feel sure that within a short time *Gleanings* will be on that side too.

Mr. D. D. PALMER again advertises his Sweet Home Raspberry in this number of the JOURNAL, and has issued a nice colored fruit plate of it. The raspberry is an excellent honey-producer and Mr. Palmer has a very choice "variety" of it, which he calls the "Sweet Home."

The Fourth Edition of Prof. Cook's "Manual of the Apiary" will be published about April 1st. This is recognized as the standard work on apiculture and is meeting with a large sale. We have received orders for it not only from England, but also France and Germany.

Where is the Bee-Keepers' Exchange for January? Has it not yet made its appearance?

Many catalogues have been issued this year for the sale of apiarian supplies—but prices fluctuate so much that they cannot take the place of advertisements in the BEE JOURNAL.

Honey is the natural food for bees. If you have disposed of all your crop and need more for feeding this spring, we can supply it by the barrel or can.

Reports are coming in confirming our fears, as expressed last month, that there would be great loss of bees in wintering. Those unprotected, are especially depleted. Dysentery has played great havoc in many Northern States.

Since the publication of our explanation entitled "Facts are stubborn things," on page 87, we have had considerable correspondence with the officers of the N. W. Ohio Convention and Mr. Everett; the result is a satisfactory adjustment of the affair—Mr. E., withdrawing his claim to having it published that he took the award over all the others not entered for competition.

The cause of the difficulty was from a misinterpretation of the facts for want of "more light." The action of the Convention and the delay of sending the Report, when fully explained, does not appear as it did to us, at that time. The Secretary it seems was absent from his home, and it was forwarded to him for his signature, the snow blockade causing some of the delay. The Convention (as complaints were made) could do no other than appoint a committee to investigate. The publication of this in the minutes was unnecessary and calculated to do harm, but as neither Mr. Everett nor the Convention had authorized this, they were not responsible for it. We are now satisfied that they had nothing to do with the "secret scheming" mentioned by our correspondent. Nearly all the members of that Convention are friends of the A. B. J., and of course we did not intend to reflect on them, or any one else. We simply tried to present the facts to prove that there was no cause for ill-feeling. We hope the withdrawal of the objectionable clause by Mr. E., will end such feeling on all sides; it certainly does with us.

Another Large Export of Honey.

The New York *Times* of February 3d, contained a lengthy article, copied from the London (England) *Times*, of January 14, 1879, from which we copy the following :

"The difficulty of exporting these delicate pieces of comb without the loss of a great part of the shipment by breakage has hitherto prevented the growth of what might doubtless be a lucrative business. During four years Messrs. H. K. & F. B. Thurber & Co., of New York, have tried to get this comb honey to England in good condition, but without success. The want of proper machinery for unloading the ships, seems to have been the principal cause of the damage. Let down "with a run" by a sling from the yard-arm, the glass boxes and their fragile waxen contents were again and again broken and spoiled. In November last, however, Mr. W. M. Hoge, the manager of the firm, succeeding in landing a consignment of 80 tons in Liverpool, and encouraged by the result of the venture, he, on Thursday, landed at the London Wharf, in Wapping, a lot of about 100 tons, brought over in the California, one of the Anchor Line of steam-ships. There are 2,500 cases in this shipment, containing over 200,000 pounds of honey, and few boxes have sustained any injury in transit. Taught by past experience, Mr. Hoge had his cases securely boarded up between bulkheads on the steamer, and in unloading employed gangs of men to pass the cases hand over hand down the ship's side into the lighter, and from the lighter on to the wharf.

"The importance which bee-keeping has assumed as a regular branch of industry in the United States may be conceived when it is stated that over 35,000,000 pounds of honey are there produced and sold annually. The tendency in this, as in other occupations, has been for the trade to be carried on by persons having large capital. The beekeepers have frequently from 2,300 to 5,000 colonies of bees, and some far larger numbers. Messrs. Thurber & Co., for instance, have about 12,000 colonies of bees. Of course, it is only by a thorough organization that such large numbers of these little workers, who toil without pay, can be looked after and cared for. The system in the United States is to farm out the colonies. Arrangements are made with farmers and those who own orchards in suitable localities to allow an apiary of perhaps a 100 colonies to be placed on their grounds. At a distance of three or four miles another apiary will be placed with some other farmer. For this accommodation either a fixed rent or a share of the honey produced is paid, and the bee-owner sends expert workmen to clean the hives, to take out the boxes of surplus honey as they are filled, and to destroy the moths, grubs, and other creatures that take advantage of the bees' frugality. As showing the lucrative character of this business, it is said that a firm of shippers paid to one beekeeper for his season's crop of honey a sum larger than the salary of the President of the United States. It is estimated that on

an average one acre will support 25 colonies of bees, and, as the yield of a colony is generally about 50 pounds of honey, it is evident that this trade may yet be greatly developed. Already the firm above mentioned, in addition to a corps of experienced bee men to tend the hives, find occupation for nine men and two steam saws during the five weeks of the year in cutting up the timber for 72,000 boxes used to hold the comb honey. The glass makers also find some outsum from the honey dealers, 144,000 panes of glass being required to make the slides and ends of these boxes."

The London *Times* is evidently mistaken. Messrs. Thurber & Co., are large dealers in honey, but we have never heard it even whispered in this country that they are large producers. However, we are exceedingly glad to hear that they have succeeded in transporting to London one hundred tons of comb honey, in good condition. Exporting will be the salvation of honey producers in America, and hence we record this shipment with much pleasure and hope it may prove a lucrative thing for Messrs. Thurber & Co.

TO FASTEN WIRED FOUNDATION IN FRAMES.—Shear about $\frac{1}{4}$ inch wax from the wire, leaving it thus —; put foundation in frame as usual and glue the naked wire to the wood; this fastens the wire and prevents sagging.

To leave the wire imbedded in the wax whether, rubbed down or glued, allows the wire to pull through the wax and is not reliable. The object of using wire is to have a substance that can be solidly fastened to the frames, to support the foundation. If not properly fastened it is liable to the same objection as other foundation.

To shear off the wax from the wire, screw a strip of pine or other soft wood to the edge of the board or brush, lay



a—Edge of table ; b—Shear.

the foundation on the same, letting it project $\frac{1}{4}$ inch; then hold the light strip on the foundation, wet the shear to keep the wax from sticking and press down.

Foreign Notes.

A Letter from Dr. Dzierzon.

The following letter will be read with interest :

Carlsmarckt, Jan. 22, 1879.

MR. NEWMAN; DEAR SIR.—You have for some time had the kindness to send me the AMERICAN BEE JOURNAL, but I have not derived as much pleasure from reading it as I should, had I been more proficient in the English language. I have, however, examined with interest the many very excellent articles and illustrations, which it contained.

I wish now to inform the readers of your excellent JOURNAL concerning an article of comb-foundation, which is lined with thin wood, and made by Mr. O. Von Corswant, in Grieswald, on which he is trying to secure a patent, from the Imperial Patent Office in Berlin.

Mr. Otto Schultz, of Buckow, who has for years, been experimenting in order to get the partition walls for comb, has sent a petition asking the Commissioner not to grant the patent. The Commissioner has referred the matter to me. I told him that Mr. Schultz was not right. The patent on his invention could not be granted because some parties from Frankenthal, Bavaria, and Mr. Frankendorf, in Switzerland, had applied for patents on similar inventions.

It cannot be denied that great credit is due to Mr. O. Von Corswant, for improving the invention of Mr. Otto Schultz. The central walls which the latter makes are of wax, and when it is built out, it is not superior to natural comb; but Mr. O. Von Corswant has hit upon the lucky idea of putting thin wood in the center, covering with wax on both sides, and then having the cells built out on it. In this way the comb will be stronger, making it almost impossible to break it, but formerly, while extracting, combs often broke to pieces. Of course, these central walls will be put in such places where the honey is to be stored, and where the extractor is to be used.

Mr. Otto Schultz will find ready sale for his invention; his comb being very good, even should the patent be granted to Mr. O. Von Corswant, which may be already done. I thought it my duty to speak well of the invention of Mr. O. Von Corswant in my letter to the patent office. I am indeed, exceedingly pleased to be able to do a favor for a citizen of the town which gave the delegations to the Bee Congress such a welcome, last September.

I am yours, very truly, DZIERZON.

Le Malmaison, Aisne, France, Jan. 21, 1879.

DEAR EDITOR:—If the AMERICAN BEE JOURNAL is valued and welcomed in the United States of America—it is even more welcome in Europe. We have no journal that can compare with it. It is with great impatience that I await its arrival, and it is welcomed here most cordially. I remain your obedient servant,

L'ABBE L. DuBois.

Foreign Items.

GLEANNED BY FRANK BENTON.

In the December number of *L'Apicoltore* (Milan, Italy) are copied four articles from the AMERICAN BEE JOURNAL.

AN OLD LINDEN TREE.—“On the Koeh, in Wirtemberg, there stands near Neustadt a linden tree which is now 680 years old. Its branches reach out so as to cover a space having a circumference of 400 feet, and in 1871 they had 106 supports. More than twenty generations have passed away during its existence. Thousands have been born and buried whilst the tree which their ancestors planted put forth new leaves and blossoms each spring.”

“L'APICOLTURA IN ITALIA.”—This is the title of an Italian work on apiculture composed by L. Sartori, Professor of apiculture in Milan, and A. de Rauschenfels, of Palermo. It contains 520 pages, with 114 illustrations. I will let an Italian, one of the highest authorities in such matters, Dr. Angelo Dubini, well known through his important apicultural publications, speak of the work of his countryman. In *L'Apicoltore*, the journal of the Central Society for the encouragement of apiculture in Italy, Dr. Dubini reviews the work and closes with the following: “We find we have only given a summary instead of an analysis of this classical and immense work; but this could not be otherwise, even should we so desire, without reproducing the whole book. Italy may be proud of this production by two men so thoroughly informed in reference to the theoretical portion as well as skillful in the practical part of the art of managing bees. We are convinced that foreign apiculturists themselves will be attracted by this Italian publication, which treats of all that is known concerning apiculture and its practical application, and that we will soon see this magnificent work translated.”

PREMIUMS AT THE PARIS EXPOSITION.—“It is six weeks since, in an open session, the naming of the awards at the *Exposition Universelle* took place, but *l'Officiel* has not yet published the names of those who receive awards. It is true, there was published on the 21st of October, a list of those mentioned in the announcement referred to, making an octavo volume; but this list is imperfect. While waiting for *l'Officiel* to enlighten the public, and for the medals to be struck, the names of foreign apiculturists (Class 83) mentioned in the semi-official list are herewith presented:

“Gold Medals—Apicultural Society of Milan, Italy; Society for the Development of Bee-Culture in Bohemia, Austro-Hungary. Silver Medals—Abbott, London, England; G. Neighbour & Sons, London, England; Rudolph Mayerhoeffer, Prague, Austria; Baron of Rothschild, Posendorf, near Laibach, Austria; Luigi Sartori, Milan, Italy; Pietro Pilati, Bologna, Italy. Bronze Medals—F. Crema, Turin, Italy; Dr. Orazio Martino, Villetta, Italy; Pietro Pilati, Bologna, Italy; Borrissovski, Moscow, Russia; Freyworth, Riga, Russia.”—*L'Apiculteur*.



Correspondence.

For the American Bee Journal.

Can we Compel Bees to Build only Worker Comb?

BY REV. L. L. LANGSTROTH.

Mr. Alfred Neighbour sent me, in 1876, specimens of comb foundation made from German plates purchased by him in 1862. Giving some sheets to a strong nucleus, in the height of the honey harvest, I watched the successive steps by which the bees prepared it for the reception of eggs and honey. It seemed to take them a little time to get into their heads the idea of how to utilize it, and I saw perhaps the first bee, who, having caught this idea, began to put it into practical use. Desirous of comparing the time required to fill a frame with the foundation with that of building new comb, I gave this nucleus an empty frame, which they filled in less time than they occupied in working over the foundation—another illustration that it often costs more to alter an old thing than to make a new one. Hoping that when bees could gather too little to induce them to work in wax, they might profitably thin out the foundation, I experimented further, but only to find that they severely let it alone. In 1875, Mr. "John Long" sent me foundation of his own make. Being then out of the bee business, he sent specimens at my request to W. W. Cary, who showed me one frame of beautiful comb, finished by the bees, which satisfied him that the invention would be very valuable.

Perhaps the very different result of our experiments was owing to the fact that "Long's" foundation was much more perfect than that made upon the German plates.* While I believe that foundation is on the whole a great success, I am far from being convinced that we should rely on it for *all* the comb that we need. Even if this can *now* be profitably done, how long will the price of wax remain so low that we can entirely dispense with the necessity of having our own bees secrete it? Mr. Newman has given, on pages 355 to 357 of the AMERICAN BEE JOURNAL for 1878, some valuable statistics, showing the very small yield of wax in our apiaries compared with that of honey. In some parts of Europe, where wax is

in such large demand for the ceremonies of the Greek and Roman Catholic churches, the yield of wax per hive is enormous compared with what is obtained by our improved methods. To get, as is done in Greece, a larger yield of wax than honey, spring pruning of the combs is resorted to, and other rude processes, which, if employed by us, would make bee-keeping quite a losing pursuit. Even if, for many years to come, it shall pay such as can afford it to use a full supply of foundation, how many there are who have not the means to procure it. It is, therefore, a very important question, to know how to manage so as to use a much smaller quantity of foundation than is needed to fill the frames. Now, the chief obstacle to a partial filling of the frames is the disposition of bees, especially the Italians, to fill out the frames when only partially supplied with foundation, with drone comb. If this propensity can be counteracted, without materially interfering with the comb-building instinct, we shall be able to increase or diminish the amount of foundation used in our apiaries. As the tendency of improved bee-culture is to increase the yield of honey and diminish that of wax, the time may not be very far distant when only so small a quantity of foundation can be used, that we shall be almost as much at the will of the bees, in the building of drone comb, as we were before its invention.

In a letter to Mr. Doolittle, I promised to give a plan by which I thought the bees could be compelled to build all worker comb. The following extracts from vol. 1, page 129, of AMERICAN BEE JOURNAL for 1861, will show how I hope to accomplish this:

IMPROVED COLVIN GUIDE FRAMES.

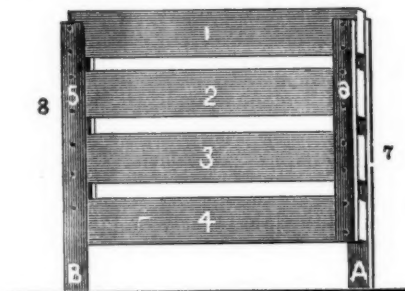
To avail ourselves fully of the movable comb principle, the bees must be compelled to build all their combs not only straight, but of uniform thickness. Every comb will then fit, without trimming, any where in any hive. For more than ten years I have kept this point steadily in view, and after numerous experiments, have become satisfied that bees, if left to themselves, will never construct their combs in the way desired. Even if they make them of uniform thickness, they will wave them more or less to give them greater strength, just as iron is corrugated for the same purpose.

I shall now give a description of a device which I invented some months after Mr. Colvin's, and which, if he should patent his invention, can only be used with his permission. My guides were tried last year with considerable success; and the mode of making them was so improved by the Rev. L. Wheaton, of North Falmouth, (Mass.) that he met with uniform success. I have still further improved and simplified their

* If I am rightly informed, "Long's" foundation was on the improved plan of Samuel Wagner. At some future time I propose to give the history of Mr. Wagner's experiments with foundation.

construction, retaining Mr. Colvin's original principle, but adding to it two very important features, viz: that these guide frames regulate the distance between the comb-frames, and hold them firmly together and "out of wind."

The annexed is a perspective view of one of these guides, and the dimensions are intended to suit the size of hive and comb-frames given in the third edition of my work on the Hive and Honey Bee.



1, 2, 3 and 4 are slats, each $17\frac{1}{2}$ inches long, by $1\frac{1}{4}$ inches wide, and $\frac{1}{8}$ inch thick. 5 and 7 are each $8\frac{1}{4}$ inches long, by $\frac{1}{2}$ inch wide, and $\frac{1}{8}$ inch thick. 6 and 8 are each $7\frac{1}{2}$ inches long, by $\frac{1}{2}$ in. wide and $\frac{1}{8}$ in. thick. In nailing, the slats are put between 5 and 7, and 6 and 8, the bottom slat coming flush with the lower ends of 6 and 8, and the top slat projecting $\frac{3}{8}$ in. above the top ends of the uprights 5, 7 and 6, 8. The spaces between the slats are each $\frac{3}{8}$ inch wide.

Thin nails (cigar box nails are best) $\frac{3}{4}$ inch long, are driven as shown in the cut, so as to fasten the slats between the uprights, and slightly clinched by nailing upon an iron surface. The lower ends of 5 and 7 (A and B) extend below the ends of 6 and 8, and form legs which rest on the bottom board of the hive. These legs are on opposite sides of the guide-frame, so as not to interfere with the bradding of the comb-frames as described in the last No. of the BEE JOURNAL.*

Mode of using them: Put the first comb-frame $\frac{1}{4}$ inch from the farther side of the hive, crowding a wad of paper or cotton between the top of the frame—where it rests on the rabbet—and the side of the hive to keep the frame in place. Now put in, as close as possible, a guide-frame; then another comb-frame, &c., until the hive has 9 comb and 8 guide-frames. The last guide-frame may be slightly bradded to the last comb-frame, so that the two can be lifted out together. It will be well to put one frame with brood into the hive (see page 115 of my work), before hiving a swarm, as the bees are more liable to desert such a hive, not knowing that their owner intends to remove the partitions between their combs.

*In that description, as well as this, the hive is supposed to be placed before the reader, with the portico on his left hand and the leg B of the guide comb on his left hand also. Eight guide-frames form a set, and where a number are made with proper facilities, a set need not cost over 25 cents, and can be used year after year.

It may be asked—Can we interfere so much with the bees, and yet not diminish the amount of comb built or honey gathered? This question can be more satisfactorily answered, after the guides have been tried, by many observers, under the varying circumstances of different seasons and locations. Enough, however, has been done to make complete success highly probable; and if the final result justifies our expectations, the Improved Colvin Guide Frames will be second in importance only to the movable comb principle.

Since the swarming season began, I have used a number of these sets of guide-frames, and find that they answer admirably the ends intended—the combs being built, to use the words of a friend describing the results in his apiary, "as perfectly as a joiner could work with square and compass." Although the bees are sometimes inclined to abandon a hive containing such guides, they do not, after fairly beginning to work, seem to be at all incommoded by them; and the guides, not interfering with the storage of honey in the surplus boxes, may be left in the hive until those boxes are removed.

To prevent the bees from leaving, the guides may be inserted three or four days after hiving the swarm; by which time, they will have too much invested in comb, eggs and honey, to be willing to go off. If, however, the hive is placed as recommended in the July number, and the wings of the queen clipped, the guides may be used without any other precautions. Since writing that article, I have had several swarms attempt to leave; but in each instance the bees returned, and the queen crawled back to her hive. * * *

L. L. LANGSTROTH.

Now, although these guide frames, or patterns, as I prefer to call them, were a great success with black bees, they proved an entire failure with the Italians. Many swarms deserted again and again, and while I could always prevent the loss of the queen by confining her in a cage; I could seldom persuade the Italians to work with any vigor. They would often sulk for days, building next to no comb,* and when they worked more freely, they preferred to build upon the sharp edges of the slats of the patterns instead of on the triangular wooden comb guides, and I abandoned the patterns in disgust.

The invention of foundation, as it seems to me, puts a new face on the matter. By using a good strip of foundation upon each frame, and one frame filled with brood, I think that the Italians would quickly reconcile themselves to the patterns.

The connection between these patterns and the compelling bees to build drone comb only, remains to be shown. Last September, as soon as I regained my health sufficiently to take any inter-

*Other remarkable instances can be given where Italian bees refuse to do as the blacks have done, under precisely similar circumstances.



est in bees, I began a course of experiments to see whether bees could be compelled to build worker comb only between the patterns. As they were not getting sufficient natural supplies to induce them to build new combs, the colonies were plentifully fed. Some frames with starters of foundation were given to them, being placed between the patterns. These were filled out with new comb, every cell of which was of worker size. Some frames more than two-thirds filled with foundation were given, but without being placed between the patterns, and quite a large number of drone cells were built. While these experiments were not made upon a sufficient scale to fully settle the question that bees will always take kindly to frames placed between patterns, if furnished with artificial comb foundation starters, they strongly point that way, and seem very nearly to prove that bees will never build any but worker combs between such patterns.

It is evident that they have no room to build between the patterns drone cells of the proper depth, and they seem unwilling to build cells with drone diameter, unless they can also give them the drone depth. Mr. Robert Bickford recommends, in the *JOURNAL*, this plan for making bees build only worker comb, and gives the same distances between the patterns (which he thought might be made of wire-cloth) as I gave many years before for the wooden ones. He does not seem to have been aware that the device had been used for securing straight combs, and that the wire-cloth patterns were first suggested by Mr. Nesbit. Wooden patterns are far cheaper, and every way more desirable. Made in the way I gave in 1861, they will always retain their proper shape. Some of my old ones were used last summer as playthings by my grand children, and after being left out for months in the sun, rain and dew, were as true as when first nailed together. The time spent in putting them in and taking them out is small when compared with their advantages—and not as great as what must be spent on any other plan to secure perfectly straight combs—to say nothing of the vexations experienced in trying to prevent the bees from building drone combs, or in utilizing them after they are built.

It is a curious fact, that I cannot remember that I ever associated the patterns with the building of worker combs only. As far as I know, the merit connecting the two ideas belongs to Mr. Bickford. Is this another instance of "building better than he knew?"

Oxford, O., January, 1879.

For the American Bee Journal.

Two Old Books on Bee Culture.

BY PROF. A. J. COOK.

I have just read with much interest and pleasure what I suppose were among the first American books treating of apiculture. The earliest by James Thatcher, M. D., Plymouth, Mass., entitled "Management of Bees," published in 1829. The other, by Jerome S. C. Smith, M. D., "Essay on the Honey Bee," appeared in 1831. This last was the first book on apiculture owned and read by Mr. Langstroth; the other was the first valuable work possessed by this greatest American apiarist. The style of both books is admirable; the spirit greatly to be admired; while not the least interesting part, is that which shows how many of the leading facts of apiculture were well known even sixty years ago.

The preface of Thatcher's work is copied *verbatim*, without credit, by E. Townley, in his book on bees. This is suggestive in view of the fact that Townley was one of those who deposited that he anticipated Mr. Langstroth in the invention of the movable frame hive.

This work of Thatcher's in style, accuracy, and the real scientific ability displayed, is superior to many modern works. The author seems well acquainted with the works of Huber, Huisch, Schirach, Reim, Bonnet, etc. The use of pollen, the function and development of the queen, the fact of fertile workers, are all accurately given. He tells how to stop robbing, speaks of various bee plants, and praises mignonne, as long in bloom, rich in nectar, and as furnishing superior honey. By experiment, he found that worker bees would fast five days, then die, while the queen would live a little longer. He also proved that bees would build comb with no food but honey. He said cells are always same size (?) and that the edge of the comb is always towards the entrance. (?) He found that giving room was not enough to always prevent swarming, and repeats the old stereotyped error that the queen leads in swarming, and that young bees at once repair to the field to gather stores. Light is made of the ringing of bells, etc., to detain absconding swarms, and the applying of nostrums to make the hive agreeable to the bees. Detailed methods are given for uniting, driving, and making artificial colonies. He states that large colonies, good and sufficient stores and uniform temperature, are the requisites to safe wintering, and

even recommends the packing system. He cautions against over-stocking, and shows that worker larvæ can be developed into queens. He gives humorous accounts of people who would not traffic in bees, as such a course would entail poverty for life. The serious havoc made by moths is so vividly depicted, that the reader thinks gratefully of our Italians and improved hives, that permit the keeping of none but strong colonies.

Frequent references are made to the *North American Review*, *American Quarterly Review*, and the *New England Farmer*, and Mrs. Mary Griffith, a lady apiarist, of New Jersey, who invented an improved hive, is referred to in the most flattering terms; and her writings in the *North American Review* are quoted at length. Her methods are praised as the very best, while her hive, which had inclined sides and bottom-board, with holes through the top for storing in boxes above, is mentioned as superior to all others, though the author had a hive of his own, which consisted of drawers one above another, etc.

Dr. Smith, the author of the other book, was a quarantine officer, and lived on an island four miles from the main land, which his bees freely visited. The facts he narrates were chiefly gleaned from his own experiments. His claims are very modest, while his references to Thatcher and Mrs. Griffith, display a spirit which is worthy of imitation.

He believes the queen a myth, the workers females, and says that in swarming the old bees drive the young ones hence, which, with plenty of room, they would never do.

He says that bees are sources of pleasure and profit, and thinks that they deserve better than to be put "in some poverty-stricken bee-shed, nailed to the gloomy side of an old barn;" also speaks of "hives hawked about by peddlers with no claim to respectful attention," which custom, unfortunately, did not die with his time.

He speaks of blowing smoke with a bellows, praises catnip as an excellent honey plant; kept his bees in a glass globe, so as to observe them; noticed that brood was often destroyed and carried out; and by marking the bees with whitewash, by use of a brush, he found that some bees were confined to the hive, while others went abroad.

It is pleasant to know that there was so much of intelligence and wisdom among these old-time bee-keepers, and that so much of our knowledge has come down from the early part of the century.

Lansing, Mich., Jan. 17, 1879.

For the American Bee Journal. Adulteration Again.

BY R. M. ARGO.

You did quite right to warn all from the practice of feeding glucose to bees; so have I, but we must award all praise to Mr. Dadant for his untiring industry in that direction. I have for years been aware of the fact that comb honey could be adulterated but thought it best not to tell how, for fear some might be dishonest. To adulterate a genuine pure and healthy article of diet with any unhealthy article known to be injurious, is dishonest. I can see it in no other light. Nor do I think ignorance of the unhealthiness of the article fed to the bees is any excuse; for what right has any one to adulterate, the purest and best of all—if I may not say the only—natural sweet in the world? If you

FEED BEES

on any sort of sugar syrup, they will put it in the combs. This may be done in October when they have not honey enough to winter on. But if you feed the same article in May and June, and you will adulterate the honey, both comb and extracted, for what you extract will contain a great portion of what you fed; if the bees are filling boxes at the time, a good portion of it will be stored there! But there is this difference, comb honey can never be adulterated to half the extent that extracted honey can be, from the fact that bees will reject the most poisonous portions of any fed to them, and with nothing but instinct as a guide they will never do one-tenth of the evil that fallen man, with reason as a guide, will.

I have never been able to get bees to accept molasses or syrups from a grocery. Is not this the surest proof of adulteration of such articles? Yet people are constantly loading their stomachs with what bees will not touch! I have fed bees frequently, but always in the fall, and then if I had not the honey I used the very best granulated sugar syrup. I have also by way of experiment fed a little of the same in a profuse flow of honey, to see if bees would notice it. Not a bee would touch it. They will not touch any thing but honey when such is plenty. I repeated this experiment one night during a flow of honey by laying a small plate of sugar syrup at the entrance of a strong colony, touching the bees, and about two-thirds or more of the syrup still remained on the plate next morning. But the question is



WHO IS TO BLAME

for adulterated comb-honey? I say, emphatically, *man*, not the bees; they are innocent.

Bees would gather all their sweets, from nature but for man, who puts unnatural and artificial sweets in their way, and then they only follow their instinct in gathering it up. But they do not gather it all up. If any one would take the trouble to look in the bottom of the feed pan they would see a good many small particles of ingredients that the bees reject.

I am of the opinion that those who feed glucose do so either just before or after a flow of honey from nature, for I do not believe the bees would take it in the midst of a flow of honey. If they do it at the close of the season, it is done in order to fill out the boxes that were unfinished and unsealed. It were a thousand times better to use such, as I do, to winter weak colonies or extract the honey, rather than to adulterate it; but if you will have them filled out, use pure extracted honey for the purpose. I never do so from the fact that I can sell 100 lbs. of extracted to 5 lbs. of comb honey, even at same price, at home.

TESTED QUEENS.

Let "dollar queens" go. I shall only sell tested queens as usual. I, as a breeder, agree with Prof. Cook, in his *Manual of the Apiary*, that a tested queen is richly worth \$5.00; breeders have come down to as low as \$3.00, but it hardly pays for the trouble.

Lowell, Ky.

For the American Bee Journal.

Another Bee Enemy—The Bee Mole.

BY DR. J. W. GREENE.

MR. EDITOR.—I herein send you a specimen for your museum. I know nothing at all about it except what I learn from an intelligent bee-keeping friend of mine—Mr. Lemon, of Utica, Mo.

This diminutive stranger is introduced to me as a "Bee Mole." My friend gave me some facts concerning its habits that may or may not be new and interesting.

The size of this animal is 2½ inches long, 1 inch wide and ½ inch thick. Its general appearance is much that of a common ground mole; its covering being that of the very finest of downy fur of mouse color. Its general shape is somewhat of a flying squirrel while its nose or snout is of extraordinary length.

Its eyes are invisible to the natural eye, but as brilliant as diamonds under a magnifying glass. This is said to be a full grown animal, weighing just 50 grains, requiring 115 to the pound troy, or about 154 to the avoirdupois pound.

Mr. Lemon tells me this animal is one of the worst of enemies to the bee, a single one being able to destroy a colony of bees in a few weeks. And he further assures me that the mole can go anywhere where a drone or large worker can, having power to lengthen and flatten itself to almost any desired shape—its natural shape and appearance being like that of a cockroach.

The bee mole makes passways through snow as the common ground mole does through the ground, only much faster. He says: It is quite common to see the bee mole on top of the snow, when it knows it is observed it rolls itself into a ball not larger than a small thimble. In this condition it will sometimes permit quite a near approach. I would not be much surprised to learn that it is a species of the ant eater. Is it this, or is it not the mice that are sometimes mentioned by our writers on bee-ology? I have myself seen our common house mice very destructive to bees, nesting and breeding in the hive until the bees and combs both were all destroyed.

HOW MY BEES WERE PREPARED FOR THE WINTER.

I have this winter packed my bees in prairie hay in the following manner: I have my apiary in a light high enclosure 100 feet long and 60 feet wide. I set my bees within 6 inches of the fence on the west side, one hive on another 2 and 3 tiers deep. I packed hay 6 inches deep under the hives, behind them and filled all spaces between them. I left the caps on the top tiers filling them also with hay. The whole thing is covered and must be kept perfectly dry. But the entire front of every hive is exposed facing the east. I made winter passages through every comb by boring an inch hole in one side of the hive and running a sharp pointed tough hickory smooth stick, clear through, after it was too late to repair the damage to comb. I left no ventilation whatever, excepting the entrance contracted to 2 inches by ½ of an inch. Some of my hives, however, have entire entrance open.

Now, let some one tell me *in advance* how my bees will come through the winter. They all had at least 30 lbs. of sealed honey to the colony. I am wintering a number of nuclei in one room of my dental office.

Chillicothe, Mo.

For the American Bee Journal.

Description of Winter Bee House.

BY W. G. WALTON.

I think my bee house for wintering is the most complete, practical and convenient that I have yet heard of. It is made double in the ordinary way, leaving 2 feet space for packing sides, top and bottom, which I have filled with fine dry chaff and pressed in perfectly tight, so it is frost proof and dry. I have a pit in the center to form a drain to answer for ventilation as well as to carry off the heavy gases (carbonic acid gas) from the bees. I have also a top ventilator to regulate the temperature, and let off the bad air which we can close from the outside on very cold nights. The double doors are placed in the center of the ends. I have a track, of 22 inch gauge, down in the bee yard which runs right up and into the bee house. The cars are made with 4 wheels and long enough to hold 10 hives in a row and 3 rows on each truck, making 30 colonies per each truck, and I have 3 trucks. After having them all loaded up in proper shape to winter, I run in one car; I have 2 little cars inside called transfer track and trucks. So that when I run the truck on them, then I run it over to one side of the house and move it, say 2 feet ahead; this leaves the little transfer trucks clear to place in the center to receive the next car load of bees, which are run to the other side of the house. The third car is run in and left standing in the center on the transfer track; remaining thus until some fine day in winter. I can with one man, run out the 90 colonies, let them have a fly, and run them in again, in about 5 minutes. I can repeat this several times during the winter. I have carried out the bees, on fine days, during the past winters; but never, even when I used to winter in cellars, did I leave my bees in all winter, without letting them have at least three flights during the winter, and have never lost a colony yet in wintering.

I believe the oftener they are out the better, so long as it is warm enough, say 80 or 85° or over; but many times when I had to carry them out, it seemed so large a job that I neglected it and perhaps when I did take them out the best part of the fine day was gone before I got them all out. By this new way, it takes about 5 minutes to take out 90 or 100 colonies and 5 minutes to put them in again, with one man's help, and can always run the cars to the same place, so that the bees will get very little mixed, as the cars can always be

placed in the same spot when they go out for a flight.

The whole cost of these trucks is not over what two men's time would be in moving bees in and out 4 or 5 times by hand, and then the bees can be managed so much better. If bee-keepers will adopt this plan of wintering, and see in the fall that each colony is in good order, with queens not over 2½ years old (18 months is better and 5 or 6 months is still better), and enough of honey, not even 1 colony in 100 will be lost in wintering. I have never lost over 1 per cent., counting spring dwindling or spring dying, and I think that there is no more risk in wintering bees than in wintering a sheep or pig.

Hamilton, Ont.

For the American Bee Journal.

Honey Boards and Prize Box Holder.

BY C. H. DIBBERN.

During the past season I adopted the Langstroth hive, prize boxes, comb foundation and all modern improvements. I was very successful, having produced nearly double the amount of surplus honey per hive, that I ever did before. However, I was not entirely satisfied with the hives, as sent out from the factory. The honey boards had very large openings for bees to pass to the boxes. I soon found these objectionable on account of the bees sticking comb to the bottom of the boxes, also gumming it so as to mar its appearance. I at once made up my mind that we had not reached perfection, as long as bees were allowed to touch the out-side of the boxes.

After a good deal of study, I hit on the following: Take 5 slats ½x1½x24 in. for the middle slats of honey board running them lengthwise of hive; two pieces 2½x½x24 in. for out-side, then take two pieces ½x1 long for ends. Nail through these into the ends of the longer slats, leaving ⅛ in. between the slats for bees to pass through. Now nail on top of honey board thus made, one of D. D. Palmer's, section holders, described in July number, *AMERICAN BEE JOURNAL*, and you have an arrangement that is hard to beat. The center piece of the holder should be nailed to every slat on honey board so as to stiffen them. I have also modified the holder using 5 slats across the hive instead of 3, as Mr. Palmer makes them. This allows the use of single separators instead of running through two or three tiers. I prefer to take off the sections as soon as finished and I

dislike to disturb one or two tiers not finished in order to get off a tier that is done. The description here given is for the double portico Langstroth hive. And one with a little ingenuity can readily adapt it to any kind of a hive.

I cannot close this article without insisting that all measurements about a hive must be very exact. It is very annoying when working with the bees to find that things don't fit. It is also very important whatever hive or box is used, that everything is uniform. If two or three kinds of hives and boxes are used, in the same apiary, I think it would save time and money in the long run, to transfer and break up all but one kind.

Milan, Ill.

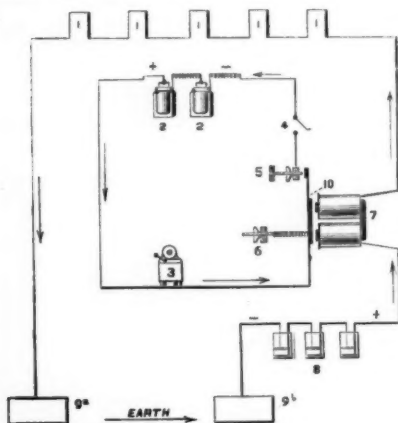
For the American Bee Journal.

Electric Alarm for the Apiary.

BY JNO. Y. DETWILER.

In response to the communication of Mr. F. W. Chapman, of Morrison, Ill., in the January number of JOURNAL, I herewith submit the following sketch and explanation which may be of advantage to him as well as others who wish to protect their apiaries by means of an electric alarm:

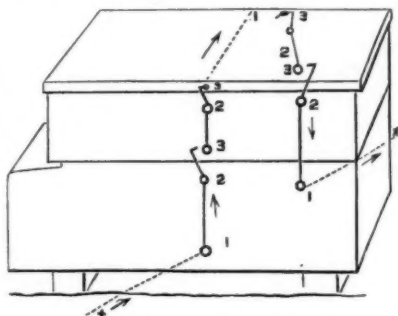
In the accompanying sketch, 1, 1, 1, 1, 1, represent the hives.



- 2 Two jars Leclanche or open circuit battery.
- 3 Electric bell (continuous ringing).
- 4 Switch or cut out.
- 5 Adjustable contact point.
- 6 Adjustable tension spring.
- 7 Electro magnet.
- 8 Gravity or callaud battery.
- 9a, 9b, Ground wire terminals.
- 10 Armature in front of electro magnet 7.

Suppose the circuit from battery 8 through magnet 7 is open, by reason of broken connection at hives 1,1,1,1,1.

The armature 10 is drawn back against contact-point 5 by tension of spring 6. Cut out 4 is supposed to be closed, which allows the current from local battery 2 to pass through contact point 5, armature 10, bell 3 and back to opposite pole of battery 2 again giving continuous alarm through bell 3 until cut out 4 is opened. Suppose connections through hives 1,1,1,1 are closed. The current passing through main battery 8, electro magnet 7 attracting armature 10, passes through connections at hives 1-1-1-1 to ground 9a, and thence to main battery 8. When the alarm is not in use, cut out 4 is supposed to be kept open. When 4 is closed, and armature 10 is not attracted



Manner of connecting Alarm to the Hive.

- 1—Broad head, tack or nail to wind wire around and drive home.
- 2—Hook.
- 3—Eye.
- x—Wire from magnet—course of current.
- xx—Wire to next hive.

by magnet 7, connections in apiary are not properly closed, spring 6 should be adjusted just sufficient to keep armature 10 in contact with point 5 when no current is passing through magnet 7. The attraction of magnet 7 is greater than tension of spring 6 whenever the current is passing through battery 8, which keeps armature 10 from closing circuit through local battery 2 at point 5, until a connection is broken in apiary when 7 ceases to attract 10 and alarm is made through bell 3 and battery 2, until cut out 4 is opened.

The probable cost of batteries, bells, &c., for the above closed circuit alarm not including work, would be about \$20.00. Though a much cheaper alarm could be constructed by any person having a slight knowledge of electricity, thereby making his own, and substituting an ordinary clock alarm for the local apparatus shown in sketch, releasing the trip wire of alarm by movement of armature 10.

Toledo, O., Jan. 21, 1879.

For the American Bee Journal.
About Queen Rearing, &c.

BY W. P. HENDERSON.

Several years since there was some controversy in the JOURNAL in regard to short lived and unprofitable queens. If I remember correctly (I have not the files before me now), E. Gallup, called them eight day queens, meaning I suppose queens that were reared or produced in eight days. He contended that queens were produced in eight days, and being at that day good authority on many bee questions, it was taken for granted by many who had not thoroughly tested the matter.

With an experience running through a decade or more of years in queen rearing, and in which thousands have been reared, I do not believe a queen from the egg, or grub however advanced, can be or has been produced in eight days. It can't be done in Tennessee.

For the purpose of procuring cells, I have, in May, deprived a populous colony of their queen and on opening the hive on the ninth day, to remove queen cells, was surprised to find a young queen out on the war path, destroying cells, but am satisfied from numerous experiments, that the colony had began to rear a queen, with the intention of swarming or to supersede the old queen, and these cells containing grubs intended for royalty, were two, three or four days advanced in the intended course before I removed the mother queen.

On one occasion I remember opening a hive on the ninth or tenth day after removing the queen and found some of the queen cells torn completely down—others slightly mutilated, while an entrance had been effected in the end of one cell, and the young queen was there with a number of worker bees all intently at work, gnawing and pulling at the queen within. I removed the cell and found that the queen, a nice large one, was almost ready, if not quite so, to make her own way out of the cell, but she was minus one of her feelers, and about half of one of her fore legs. I immediately introduced her to a queenless nucleus, but being so young and weak and on account of the loss of one foot, she did not stick to the combs well, and the bees, although, they did not try to kill her and ball up on her as I have seen them behave towards old queens, seemed to regard her as an unfit occupant of the hive and tried to remove her. I caged her for 24 hours and then released her, but the

bees were still not disposed to let her remain undisturbed amongst them. After caging her again for 48 hours, she appeared quite lively, and the workers then treated her with the honors of one of the household. In time she took her marital flight, and afterwards proved herself a prolific and valuable queen, filling her hive two consecutive seasons with brood. Her wings being perfect, the other mutilations did not seem to affect her in the least. And after she commenced to lay, I am satisfied if her wings had been clipped, it would not have affected her future usefulness.

Murfreesboro, Tenn.

For the American Bee Journal.
Are these Queens Pure?

BY S. D. M'LEAN.

On page 314, November number of BEE JOURNAL, Mr. Alley speaks of the progeny of Italian queens and remarks: "The color seems to run all one way, either to the drones, or to the workers and queens." After giving an example of a queen that produced drones as black as any common drones he ever saw, he asks: "Was such a queen impure?" He answers, "by no means, for all her young queens that were fertilized by handsome drones, were as pure as their mother." Now, if the color runs all one way, as Mr. A. says, had the queen produced black workers and queens and light colored drones, then according to the above reasoning, she would have been pure. But would any adept in the science of bee culture have recognized her as such? Certainly not.

But all her young queens that were fertilized by handsome drones were as pure as their mother, and (a priori) those mating with unhandsome drones were impure. Why impure? For if the color runs all one way, and the generally-received Dzierzon theory of parthenogenesis, or agamistical reproduction, be true, then those queens having mated with unhandsome drones (the drones having no sire, would certainly be pure if the queen was pure) should be pure, and should produce as pure bees as those having mated with handsome drones. The whole subject seems to be inexplicable!

But our friend is certainly right when he says, "In rearing queens, those mothers that produce the handsomest workers should be used, and only handsome drones to fertilize them; then can the standard of purity be maintained." But should not our queens, that produce



the handsome workers, also produce handsome drones? Our experience with Italians has been such as to justify us in saying they should. We have generally found that queens which produce the best marked workers will give us the nicest drones, and those that produce bad drones generally produce workers that, notwithstanding every bee may have the three bands apparently well marked, yet upon examination the yellow bands of many of the bees will appear to contain minute freckles or mottles which are overlooked by the careless observers. The queen progeny of such queens is anything but satisfactory.

Culleoka, Tenn.

For the American Bee Journal

Comb Foundation—A Grand Success.

BY C. R. ISHAM.

I do not think it any exaggeration to assert that pure wax comb foundation is the greatest improvement of the age. When, at the National Convention of 1877, Capt. Hetherington said its use in the brood chamber was "a success," no one present but Mr. Nellis and myself were willing to admit the advisability of its use in boxes for surplus honey (and I must confess that my confidence was somewhat shaken in the face of the overwhelming opposition); but when Mr. Hoge announced that "H. K. & F. B. Thurber & Co., whom he represented, would another season pay the highest market price for honey built upon thin foundation, such as manufactured by Mr. Nellis and Mr. Isham," stored in a certain style of box, etc., I concluded that it would achieve a success equally satisfactory to producer and consumer.

For filling frames I use foundation of pure yellow wax made by a 5-inch machine. By lapping the edges of two pieces cut to requisite length, which properly fastened (by drawing a warm iron along the seam) makes a sheet of the requisite depth. We have put new swarms into hives with every frame filled with such foundation; have used frames filled with it among empty ones, also between frames of natural comb, with the same unvarying success—all worker comb built straight in the frames, and when filled with brood and honey, hardly any more perceptible sagging than is often seen in the upper rows of cells in combs built entirely by the bees.

For surplus honey we use thin foundation, which when made from pure

wax of the right quality, the bees draw out to the requisite thinness, filling the boxes much sooner than when natural comb is used for starters. The capping is smooth and more evenly built, causing it to present a finer appearance, a very desirable thing in these times of overstocked markets.

It enables us to place our clover and linden honey in competition with that of large producers, although they may be favored with the balmy breeze of the Sunny South, or the golden clime of California—often exceeding us in quantity, but never in quality! The amber-colored honey gathered from the flowers that during the summer months of June and July whiten the green pastures of the North, succeeded by the light-colored, aromatic nectar, gathered from her numerous linden forests, put to flight any attempt to surpass in quality the productions of our apiaries. This one object, to obtain all the honey we possibly can from these two varieties of flowers, whose yield of nectar is often limited to a few days, will alone, in our estimation, make comb foundation a valuable acquisition to the apiary!

Peoria, Wyoming Co., N. Y.

[If "fine appearance" and "firmly built comb" for safe transportation, were all that should be considered in determining this question, then there could be but one opinion about the desirability of using comb foundation in surplus honey. But is not its production for the "festive board" of consumers of the *most importance*? We have bought and sold considerable comb honey during the past year—some of which was built upon the ordinary comb foundation, and, of course, some was of natural comb; but no *consumer*, having purchased any of the former, would take another box of it; and to our knowledge, some refused to purchase any more honey on account of what they were pleased to call the "wax sheet in the centre."

To us, therefore, it seems that the only question worthy of serious consideration and final decision, is, whether we shall consult the wishes of consumers, so that the demand may steadily increase, or whether the ease and safety of transportation alone shall control the issue. If the former (and therein lies our only hope for success), then the *ordinary* comb foundation must not be used in surplus honey. It is an undeniable fact, that the bees will not always thin out foundation, especially when the nectar is flowing freely!—Ed.]

For the American Bee Journal.

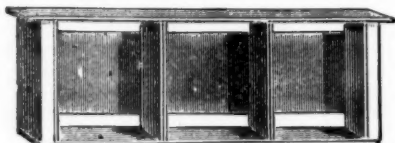
Description of the Hives I use.

BY G. M. DOOLITTLE.

From the numerous letters I get, asking for a description of the hives I use, I think I cannot please the readers of the AMERICAN BEE JOURNAL better than to describe it.

In the first place I have what I call an emergency hive, for use at all times when I do not wish to permanently locate a colony, and for queen rearing. This is simply a box made of inch lumber without bottom or top, 12 inches wide, 12 inches deep and 13½ inches long inside, with front and rear rabbeted for frames. The bottom board is 15½ x 18 with 1½ x 2 scantling nailed to it to keep from warping and to sit on the ground. The top is made like a sugar box cover, to slip over the hive. This holds 9 Gallup frames, or any number less than 9 can be used, in connection with the division boards described in the JOURNAL for Feb.

If I have a swarm come out unexpectedly I put them in this hive till I decide what to do with them, and if while there they build comb it is in the



Three-box Prize Case.

frames just where I want it and not in the top of some old box, as it would be if I used such for that purpose. I also use such hives for rearing queens, and like them much better than a nucleus hive. Next I have the standard Gallup hive, which is a box like the above, only it is 18 inches long, instead 13½; and has a cleat nailed all around ½ inch from the top, for the cap to rest on, which is 8 inches high. The bottom board is the same as for the other, varying in size of course to fit hive. I use, in all my hives, an entrance ½ inch high, and as long as the brood chamber, cut from the bottom of the front of the hive, which is enlarged or contracted by means of entrance blocks which are an inch square, of the desired length, and are beveled at one end back 1½ inches, so as to guide the bees to the entrance. I have always preferred this to moving the hive backwards and forwards on the bottom board, as many do. The standard Gallup hive is made to hold 12 frames but I said in the Feb. JOURNAL that I reduced them to 9. This hive I

use for box honey, and two or three stories high for extracted honey. When I use it for extracting, I use all 12 frames, seven 3 box, prize cases (see cut), just cover the top, and if the boxes are taken out as fast as filled, a good yield of honey can be obtained from this hive.

I next come to what some feel disposed to call the Doolittle hive, but it is a combination of different principles of hives and sections, with but very little Doolittle about it. However, as I have been successful with it, and believe it to be the principle on which a hive should be made to secure the best results in box honey, no matter what style frame is used, I will give as plain a description of it as I can, and you may call it by what name you choose. In order to make it plain I will give the size and number of pieces contained in a hive by No., and then tell you how to put them together.

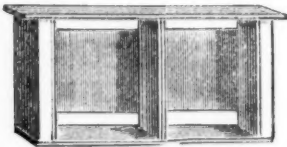
Number.	Pieces.	Long in Inches.	Wide in Inches.	Thick.	Number.	Pieces.	Long in Inches.	Wide in Inches.	Thick.
1..	2..	24	x 12	x 1	16..	2..	17	x 23½	x ¾
2..	2..	14½	x 12	x 1½	17..	2..	14	x 1½	x ¾
3..	2..	25	x 1	x 1	18..	2..	11½	x 4½	x ¾
4..	2..	16½	x 1	x ½	19..	4..	4½	x 1	x ¾
5..	2..	25½	x 8	x 1	20..	9..	13½	x 1	x ¾
6..	2..	16½	x 8	x ½	21..	9..	11½	x 1½	x 3-16
7..	1..	27	x 18	x ½	22..	18..	10½	x 1	x ¾
8..	1..	25	x 20	x 1	23..	15..	12½	x 2	x 3-16
9..	2..	25	x 3	x 2	24..	15..	11½	x 2	x 3-16
10..	1..	25	x 5	x 1	25..	30..	65-16	x 2	x ¾
11..	1..	13½	x 11½	x ¾	26..	60..	6¼	x 2	x ¾
12..	4..	7	x 5	x ¾	27..	60..	5	x 1¾	x ¾
13..	2..	12¾	x 10¼	x ¾	28..	1 sheet tin	20	x 28	
14..	2..	12½	x 14	x ¾	29..	15	"	11¼	x 5
15..	2..	14	x 3	x ¾	30..	2	"	13¾	x 2½

Now we will suppose you have all these pieces cut to the dimensions above given and wish to put them together. First, take number 1 which is for sides to brood chamber, and cut on the inside 5 inches from the ends ½ inch slots or mortices, ½ inch deep, clear across, for the slotted division board, number 13, to slip into, when the hive is nailed together. Then rabbet out the upper edges between these slots ½ inch deep by ¾ back, for the frames to hang on. Then we cut the entrances ½ deep the length of the brood chamber in front board. Next nail number 11 to back board between mortices, and even with bottom and rabbet at top (No. 11 is simply to fill up the space so that the comb will not be built at the ends of the frames). Then nail number 12, on each lower corner, even with bottom mortice and end, for the lower tier of cases to hang on, and the hive is ready to nail together, by nailing number 2 to the ends of number 1. Slip into the slots or mortices, number 13, which



should be previously slotted with $\frac{1}{4}$ slots nearly the whole length of it, so as to correspond with the spaces above the tin separators of the lower side cases, and at the bottom of the upper side-cases, for passage for the bees from the brood chamber to the side boxes. Slip number 13 down, $\frac{1}{4}$ inch below the top of the hive, and fasten by nailing little $\frac{1}{4}$ inch square blocks below it in the mortice. Nail number 3 to the outside of the hive, front and rear, $\frac{1}{4}$ inch from the top for the cap to rest on, and then nail number 4 to the ends of number 3 and the hive. Nail number 6 to the ends of number 5 for the cap, getting it square; then nail number 7 on the top, projecting equally on all sides, for the top to the cap. Put on number 28, and turn it down nicely all around, and you have a nice tin-roof, which should be painted white, so as not to draw the heat. The top can be made of narrow strips, just as well as from a whole board.

Now for the bottom board which is number 8 and is to have number 9 nailed to each end, so as to project 5 inches in front and their projection is to be beveled for the alighting board,



Two-box Prize Case.

number 10, so as to make easy access for the bees to the hive. Now the hive is complete, except the frames and surplus arrangement. Numbers 20, 21 and 22 are for the frames (9 in number) which should be nailed together, so as to make them just $10\frac{1}{2} \times 10\frac{1}{4}$ inside measure. For comb guides we use a strip of wax run on by means of a straight edge, as has been stated in the JOURNAL several times. Numbers 26 and 27 are for the prize boxes, 30 in number. Number 26 is to be nailed to ends of number 27, so as to project $\frac{1}{4}$ at each side. Tin tacks (4 in number) are to be driven into the edges of number 27, $\frac{1}{4}$ inch from the outside, so that when a 5×6 glass is dropped in, the tins are bent down and all is secured. If you never saw a prize box perhaps you better send to the JOURNAL office for a sample, as it costs but little. Numbers 23, 24 and 25 are for 15 two-box cases (see cut) and are to be nailed together so as to be $10\frac{1}{2} \times 6$ 5-16 inside measure. Number 29 are tin separators and are to be nailed one on each case, so as to be 21-32 of an inch from the bottom and

the top of the cases. Number 24 is to be slotted out $\frac{1}{4}$ inch, on each side, to give entrance to the bees. Now we will suppose the hive is made, sitting on the bottom board, with the frames all in their proper place and boxes all in the cases; take number 17 and lay them on each side of the hive, and on the top of the ends of the top bar of the frames, for the cases to rest on, and then put 7 cases on them. Now hang in 2 cases on number 12 at the side, and you can see if your slots come in the right place, that are cut in number 13. We forgot to say that in each case on top, 2 nails are to be driven so as to project $\frac{1}{4}$ inch. They are to be driven close to the side the tin is nailed on, and the tin is to be away from the slotted division board. Now put 2 more cases on the top of the lower ones, or on the nails, the nails are to keep the cases from crushing bees, and as the cases are to be interchangeable the nails must be on all of them. Set cases in the other side also and place the tins, numbered 30, between the side and top cases, resting their lower edges on the top of the hive.

This is to prevent the bees from bridging the combs, at the bottom of the top bars, and the top of the side boxes. Now take number 14, and fit it so that it will go down to within $\frac{1}{8}$ of the bottom of the hive, and rest on number 12. Nail number 15 on to it in the center, so as to keep it from warping and slip it between the side cases and the end of hive. Then push number 16 (which are for keys) between number 15 and the end of the hive, and all is keyed up tight, so that the boxes and everything comes just where it should. If you wish but 2 cases at each side, these keys work the other way to just as good advantage. Take number 18 and nail the little cleats, number 19, at each end or within 2 inches of each end, so that they will project 1-16 at each side, and set them up at sides of the top cases. As the cleats are a little longer than the board is wide, the attraction of gravitation will always keep them in place.

If I have made no mistake your hive is now complete and you will probably consider it "an expensive rigging," as did Novice, but I will say that in 1877 I secured from 3 old colonies in the spring, in just such hives, 896 lbs. of box honey. One giving 309 lbs.; another 301 lbs. and the third 286 lbs. The average yield of what hives of this kind I had in use in 1877 was more than 200 lbs. of box honey per colony.

I believe this yield has never been exceeded by any hive in existence. I

should not make this statement were it not that Novice claims that his Simpli-city hives are the *Ne plus ultra* for all to use.

If you wish to use this as a chaff hive (as many of mine are) cut number 2, 22½ inches long and let them project 4 inches on each side of number 1. Then get 2 pieces similar to number 1 but only ½ inch thick and nail the number 2 pieces to them, so as to leave 3½ inches between them and number 1. Make the cap and the bottom board to fit, and pack in the front and rear permanently. After the boxes are off pack ends and cap, and you have as good a chaff hive as any one. For winter, I use quilts over the frames and down the ends, over slotted division boards, filling the cap and place for side boxes, with fine straw, whether chaff hives or not.

In conclusion I would say, I know of no hive with which one can secure large results by simply folding his hands and letting the bees work. I wish it understood that large yields of honey can only be secured where there are large numbers of bees in a hive; and securing the bees in time for the honey harvest is one great secret of success. That more bees can be secured by the use of the Gallup frame than any other is only one of our preferences, and we must be excused for preferring this frame in this locality. But whichever style of frame is preferred, the principle for securing box honey as given in this and the February number is certainly correct. Next month I shall commence a series of articles on how I manage an apiary and the above hive.

DIVIDING BEES.

John Fox wants me to tell him "how to divide without empty combs and have the bees build worker and not drone comb." One way would be (if we wished increase instead of honey, as he does) to get queen-cells started by removing the queen from a populous colony (one we wish to breed from) 25 days in advance of the time we wish to make our swarms; then in 10 or 12 days form as many nuclei, lacking one, as we had sealed cells, by taking a frame of hatching brood, bees, &c., from the colony to be divided (being sure not to take the old queen), and putting them in an empty hive, setting it where you wish your new colony to stand. Go back to the same hive and get another frame of bees, but instead of brood, get honey if possible, and set it with the other frame in the nucleus. Contract both hives with a division board, and in 24 hours give the nucleus one of the sealed cells. As soon as the queen in the nucleus

commences laying, go to the colony you took the frames from to form the nucleus, and take away all the combs they have, brushing or shaking off all the bees and put in empty frames in their places. Thus you will have the same as a natural swarm, and they will build comb just the same as a natural swarm would; I will not warrant it to be all worker comb, but the greater part of it will be, if your queen is good for anything. Now take the frame of brood you have taken from them, and place them into the nucleus, and you have two good colonies of bees. If you wish farther increase you can treat that which was the nucleus in the same way in a week or so, and so on, as long as the honey season lasts. Of course it will be unnecessary for me to say, never make swarms by any method in a time of scarcity of honey.

Borodino, N. Y., Feb. 12, 1879.

For the American Bee Journal. A Home Market for Honey.

BY WM. H. S. GROUT.

The state of the honey markets seems to trouble some, but I think with the help of the JOURNAL that I have found the true way to sell honey. Extract all the surplus and then sell it all at home at a rate that the poor can afford to buy. My crop this season has been over 5,000 lbs. and I have sold all I can spare at 10 cents here and feel happy. Previous to this season I have sold occasionally at 15 cents, and sent some to dealers in the cities and sometimes found one that did not pay up, so that on the whole, the sales have not averaged more than 10 cents per pound, and the bother and vexation which amount to something. The honey should be well ripened in the hive before it is extracted, so that the customers can not help being satisfied. Have sold as high as 168 lbs in a day, and attracted by the low price they came from far and near; nearly every day I could have sold as much more, if I had it.

I used 50 pounds of comb-foundation last year, with decided success. It is a great help to apiarists and with its aid one can soon rid his hives of drone comb. It all sagged more or less, but do not see that it was any harm. It is certainly better than natural comb.

A word about hives. I am still firm in the belief that the double "Long Idea" hives are best to use for extracted honey. My frame is 11x13 inches inside and I have used two-story hives almost every season by the side of the long



ones, with results uniformly in favor of the long hives by not allowing swarming, and dividing about Aug. 1st.

A correspondent of the JOURNAL lately asserted that honey extracted from the brood combs was not of good flavor. I do not see any difference. I extract from all that will pay for handling.

I notice that Mr. Baldrige criticises Mr. Stephens' yield of wax, in December number. Now judging by my experience, 1 lb. of wax to 100 lbs. of honey is about right.

Poland Center, N. Y.

For the American Bee Journal.

Hives and Wintering Bees.

BY JAMES HEDDON.

In the last JOURNAL, our old friend G. M. Doolittle told us all about hives—that they should contain Gallup frames and boxes on the sides, &c., so that all can have the pleasure of handling them over a few extra times, &c., &c. "Great minds run in the same channel," 'tis said, but they don't this time.

Just allow me to predict that the 8 frame Langstroth hive will be about the only one used by specialists in a few years, where any frame hive is used. Should bees succeed well in wintering, for the next few years, I expect to see the improved box hive come into use quite extensively. We shall see that those Germans are not so foolish yet.

I quite agree with Mr. D., that small hives give the best results, in the hands of the careful bee-keeper. When I said at our State Convention held at Kalamazoo, four or five years ago, that I could get just as much honey *pro rata* from nucleus as from full colonies, some laughed heartily. But that did not change the fact. I have used several kinds of side and top storing hives, but just now I prefer the hive that stores all on top, and I also prefer a long narrow hive. It gives a suitable amount of box room, where I think it should be, and it also has fewer ranges of combs and spaces, which I think to be a great advantage in successful wintering.

Mr. Dibbern very kindly tells us how to make a nailing-block for sections. Now truly, I never could get any advantage out of nailing-blocks, for nailing frames of any kind. The "wind" in them is just what bothers most, and that is what the block does not correct.

I will next month give a description of the Langstroth hive as I use it, also my own peculiar method of applying sections, which is I think, much the

simplest and cheapest way. I meant to do it in this article, but I find it will be necessary to illustrate it more or less, to make it intelligible to your readers.

"That bee disease" is again on the "war path," and many apiaries are rotting down with it. I have no doubt but that it is caused by the extremely cold winter and long confinement. The bees have been confined nearly 2½ months up to date, and a few years ago they came through all right, after 4½ months confinement. The extreme cold weather which we had for about two weeks (the rest of the winter has been mild here), was such a dreadful thing, that it too must have had a hand in the death; but it is curious how this zero, could slip into our houses and cellars, making them sick there too, and do it so quietly. The thermometer never knew how old cold was there, quietly reclining at 38° to 42° above zero. Strange, again, the chaff-packed boxes have not got any more respect for their sanguine owners than to let the cholera walk right into them also. But snch, Mr. Editor, is the fact.

So little is known about causes, preventatives and cures of this disease, that I thought last fall, that having a goodly number of colonies, I would try and learn something about it by experiment. Accordingly I spent \$100. in time and fixtures, and am every day carefully noting effects. I am wintering in eight different ways, and, so far, it looks as though the greatest superiority would in future be, in breeding out this disease. It is not time to whistle yet, as we are not out of the woods. I will give you a detailed account of the results for the June JOURNAL. We shall by that time be pretty well settled in the matter.

Dowagiac, Mich.

For the American Bee Journal.

About "Dollar Queens."

BY J. W. PORTER.

FRIEND NEWMAN.—I know you are down on the dollar queen business, but I also know that you are fair enough to give all sides a hearing on mooted questions.

In your article on page 5, on "untested queens" you quote with apparent approval the statement or confession of a breeder of queens. In that he says: "If a colony be made queenless it will start 15 or 20 queen-cells; but only three to five are ever designed by the bees to be developed into queens." Where is the proof of this?

I have seen seven spring out of as many cells on one comb within a few minutes. In their course of nature the survival of the fittest is provided for by "a slaughter of the innocents," but, is it not true that any one living may be developed into a perfect queen by the removal of the others before hatching. If not, why does Prof. Cook, on page 164, of his excellent Manual, recommend this very plan and tell us we can secure 15 or 20 cells and under conditions "requisite to secure the most superior queens." This plan and this assurance is given by many able and successful apiarists.

And yet Prof. Cook quoted from the "Manual" in the JOURNAL, page 35 as follows: "The tendency of the dollar queen business is to disseminate inferior queens, many of which will appear in every apiary." In your JOURNAL I think some breeders have proved their ability to raise dollar queens and make money.

I am not in the business, but I think it time that such arguments against such queens be dropped, or else the books be revised, and some plan be devised to enable the apiarist to tell which of the 15 or 20 cells started are to be selected. Who is the wise man that can do this? Times have changed and so have prices since dollar queens were first offered. Compared even with the prices of honey, sixty-six cents for queens now, would be as good as a dollar then; and I venture to say, the same ratio would hold good as to other kinds of property.

But have we arrived at that point of perfection in breeding, that we can tell without testing which are the best queens? I think not, and a reference to the debates of our conventions justifies me. And testing, what is that? As I understand it, the breeder simply tests the purity and the fertility before shipping, which takes time and costs trouble. But is there any test of high marked value? We will arrive at a more just and fairer conclusions, if we will look at this matter as it is. Why, in many parts of the country Langstroth hives were sold at \$7.00, and since the patent has expired, competition and increased facilities give us just as good or better hives, at one-fourth the money.

What are dollar queens? Men of character advertise to send good queens, reared from imported mothers, warranted to be mated but untested at that price. We will say that 20 are started as Prof. Cook recommends. The breeder's success depends upon fair dealing. If he sends out puny queens, or indeed any, which to the eye are im-

perfect to any great extent, he will lose his custom. If to the eye it be perfect, what but an extended trial will determine its value? Who can make this trial most cheaply? Then, who most satisfactorily? The breeder can perhaps, do better selling untested at \$1.00, than tested at \$2.00. But if all are tested, it is not likely that all are of equal value. I buying a dollar queen, have a chance to get a better queen at that price than if I paid the higher price.

I speak, Mr. Editor, in behalf of a large class who may be able to, and would buy the cheaper queens and then cross their stock, and who would be deterred by higher prices. But the higher prices do not ensure satisfaction as a reference to the back volumes of AMERICAN BEE JOURNAL will show.

May we not leave this whole subject to be regulated by the laws of trade and nature, which will doubtless decree the survival of the fittest among breeders, as it does among bred?

Charlottesville, Va.

•••••
For the American Bee Journal.

Moving Bees in Cold Weather.

BY JOHN R. LEE.

A few years ago I thought the colder the weather the better for moving bees, but since I have had more experience I have come to the conclusion that many colonies are lost by disturbing them in cold weather. They form a close compact cluster to keep warm by animal heat; and any person handling bees on a cold day will notice how easily they chill and drop down when they once leave the cluster.

Two years ago, while living at Oxford, Ohio, the home of Langstroth, a neighbor, having 7 colonies in good condition, with from 30 to 50 lbs. of nice white clover honey each, and strong with bees, sold his house and lot making it necessary to move his apiary. The weather being warm when he moved his household goods, he thought best to leave his bees for a cold day. So in December, when the thermometer was about zero, he loaded them into a spring wagon and moved them 6 miles, and in so doing lost all but one. This led me to conclude that disturbing bees in cold weather causes them to break up the cluster, and if it remains cold for several days thereafter, they are ruined. I am aware that bees will survive after a zero freeze, for I gathered some off of the snow one very cold morning after they had laid out over night, took them into a warm room, and fully one-half of



them came to life and flew to the window, but I very much doubt if I had left them out another night whether any of them would have revived.

Huntsville, Ala.

For the American Bee Journal.

How I make Shipping Crates.

BY W. PIERCE.

Instead of the usual method of screwing the top on the crate, I have made my covers an inch longer than the crate and nailed firmly at each end to the edge of a piece one-half inch thick and two inches wide, or, as wide as the upper side piece, with which it will thus correspond.

This will prevent the cover being split, and, if properly done, will fit nicely, keeping its place well when not fastened. To fasten, put a single screw through the middle of each of the end pieces, reaching well into the end of the crate. This will hold the cover firmly in place and at the same time form the best of handles, without sawing them in the end of the crate. The advantage of having but two screws to remove to open the crate, will be found a great convenience.

The best way I have found of putting the top together to be certain of a perfect fit, is to first screw the cleats to the upper edge of the ends of the crate, flush with the top, then rest them on two blocks placed just far enough apart to permit the body of the crate to slip between them and high enough that the bottom may not touch the bench or plank to which the blocks are fastened. The cover may then be nailed to the cleats and the screws removed preparatory to packing.

Garrettsville, Ohio.

For the American Bee Journal.

My Method of Wintering Bees.

BY J. F. BLAISDELL.

I have 50 colonies of bees. I have kept bees for 12 years and after trying various ways, I have succeeded in not losing a colony by wintering for the last 5 years, except 2 that starved, through neglect. My method is to carry them into the cellar when the weather becomes cold; about the time that the snow comes to stay. For the last 3 years this occurred about the last of December. I think the later they remain out in the fall, if not too cold, the better. When I put them in I raise them up and put an inch strip of

wood under each side of the hive, to let all the bees that die in winter drop clear off the comb, so as not to mar it; then take the cap off, to give a free circulation of air through the hive, and I have no mouldy combs. I clear the dead bees from under the hive two or three times, during the winter season. The comb will not be mouldy, and the bees keep healthy in damp cellars. I have an open well in my cellar and give no ventilation except what it gets by the cellar door when we go down. The thermometer ranging from 42° to 45°, which I think is about right for this country. As the weather gets warm in the spring I put another strip of wood under the front and back, and put the cap on, to keep them in, if they get uneasy.

Fort Fairfield, Maine, Jan. 6, 1879.

For the American Bee Journal.

Grape Sugar as Food for Bees.

BY CHAS. DADANT.

The manufacture of glucose is of recent introduction in this country, while I see, in the *Maison Rustique*, that as early as 1830, glucose was extensively manufactured with potato starch in France. This kind of glucose is to-day considered the best, and sells here higher than corn starch glucose.

Of course, such a cheap sugared matter, in a country like France, where the duties on sugar are very high, could not pass unnoticed by French bee-keepers, as a cheap food for bees. But the reports were not always encouraging, on account of the impurities, such as sulphate of lime, sulphuric acid, or lime, contained in glucose. Some bee-keepers praise this food, while others complain of having killed their bees with it. Of course the difference came as much from the difference in the purity of the product as from the circumstances in which it was used.

Impure glucose, used as food in spring, will do very little noticeable harm, if we except the influence that it can have on the strength and the health of the young bees who were reared on such stuff. But in winter, while the bees are unable for weeks to void their faeces, such feed may destroy whole colonies of them. Such result is not to be feared in France so much as in this cold climate. Never, in France, have I seen bees unable to go out of their hives for 3 weeks at a time in winter. Yet French bee-keepers seem to be reluctant to use glucose. Mr. Hamet, publisher of the French bee-paper, *L'Apiculteur*, in his *Cours d'Apiculture*, advises bee-keepers

to use glucose only when it is worth less than 4 cents, the price of sugar being 12, with one-half honey or sugar, adding that 2 pounds of glucose will not prove more nourishing for bees than 1 pound of honey. Such is the opinion of a disinterested editor, who has heard both sides of the question.

If we follow the advice of Mr. Hamet, we will mix 10 lbs. of solid glucose, or grape sugar, worth, at 4 cents, 40 cents, with 5 lbs. honey, at 10 cents, 50 cents, and obtain 15 lbs of the mixture for 90 cents. But this mixture will not prove to contain more food than 10 lbs. of honey, worth \$1.00; and we can obtain as much and a better food, by using 9 lbs. of white sugar, worth about 90 cents. Thus the profit is reduced to nothing!

Besides, as we have only *interested affirmations* to prove that glucose contains no noxious substances, while *every report of disinterested chemists* proves that glucose is not always wholesome; as on the other side, glucose contains always heterogeneous matters, while pure cane sugar contains 99 per cent. of sugar, we shall be on the safe side by feeding bees exclusively with good honey, or with pure, white, cane sugar.

But that is not all. Mr. Hamet adds that solid glucose has the inconvenience of becoming hard in the hive, and that bees are then unable to use it, nor even to remove it from the cells. Mr. Root does not deny the fact, but this did not deter him from inciting his readers to use such a poor substitute for honey.

In Germany, also, they seem to have very little confidence in glucose as food for bees, since they are yet in search of a cheap matter to be used in place of sugar. A few years ago they were experimenting with extract of malt, which in time, after many praises, was abandoned.

Mr. Lewis Best, superintendent of the Davenport glucose factory, in *Gleanings*, says that his grape sugar is free from all sulphuric acid and sulphate of lime. He adds that he is ready to answer any other question asked. In the November number of the AMERICAN BEE JOURNAL I asked him several questions, but he has not answered them. I will reproduce one of them.

If we mash ripe grapes, their juice, or must, is heavier than water, on account of the sugar that this juice contains. When this must, or juice, has fermented, it is lighter than water; the sugar of the grapes having been changed into alcohol—the weight of pure alcohol being less than four-fifths the weight of pure water. Therefore, the more alcohol in a wine, the lighter the wine. If,

to increase the quantity of alcohol in our wine, we add to the must some solid glucose, from the Davenport factory, the sugar of the glucose is also transformed into alcohol; but, in spite of the transformation of the sugar of the juice and of the sugar of the glucose added, the wine obtained is heavier than water. What is the matter contained in the glucose which causes such a result?

This wine, strengthened by glucose, never has done fermenting; it clarifies so slowly that some wine-growers use salicylic acid to stop fermentation and make it salable.

These results are not due to the addition of true grape sugar, for, every year, I add to my grape juice the water in which I have washed the cappings of the extracted combs. Yet, with this impure honey, I make very good wine, which has done fermenting and is as clear as pure water, inside of two or three weeks.

Why is it not the same with solid glucose, if it is identical with the grape sugar of which honey is constituted? In spite of the impure honey used, the color of my wine is bright red, while the color of the wine made with the addition of solid glucose is dull red—nearly violet. The same color can be obtained by mixing a little lime in a glass of wine. Are not such dissimilar results due to the sulphate of lime, or to the sucrate of lime, or to both of these substances contained in the corn sugar of the Davenport factory? It has not yet been proved that the use of glucose is not without danger. Can Mr. Best satisfactorily solve the following:

1st. As food to promote breeding, we run the risk of lessening the endurance and vigor of the young bees reared on such food; the best factories (the Davenport factory not excepted) being unable to manufacture a product always absolutely deprived of dangerous matters.

2d. As food for winter: for glucose, under some circumstances of impurity, or during long protracted periods of cold days, will act like molasses, and a great many bee-keepers have tried molasses as winter food with the worst results.

3d. If we add to these results the fear of spreading, in the minds of people at large, the idea that our crops of honey are due to the use of glucose; and this idea is already too much disseminated, and may, as Mr. Chas. F. Muth has remarked, cause a serious damage to the sale of honey either in comb or extracted.

If we compare these risks to the small profit (if there is any) in using glucose as food for bees, we shall conclude that the benefit is too small; and I doubt not



but that all will in future let glucose alone.

Prof. Kedzie, page 76 of the *AMERICAN BEE JOURNAL*, says:

"The sugar of liquid and solid glucose has the same composition, and is made of the same materials. The only difference is that glucose syrup contains more water than glucose sugar. If the syrup is boiled down it forms solid glucose. Still, some persons claim that solid glucose is not as sweet as liquid glucose. . . . We have in the laboratory a specimen of grape sugar which, when made into syrup with water, is fully as sweet as the glucose syrup of commerce."

In Europe solid glucose is made by boiling down liquid glucose, and the books of chemistry seem to know of no other process to manufacture it.

In this country the manufacturers have found a cheaper process to produce solid glucose, or something having the same likeness. In France, when liquid glucose is worth 4 cents, solid glucose sells for about 6 cents. The difference pays for the fuel, the work of boiling down liquid glucose, and the loss of weight by the evaporation of a part of the water contained in it. Imported glucose, in comparison with its price and density, is dearer than this syrup.

Here it is the reverse. Liquid glucose is offered at 5 cents and solid glucose at 3½ cents. It is acknowledged that solid glucose is bitter in taste. Why? On account of the great quantity of succrate of lime contained in it.

Some affirm that solid glucose is not as sweet as liquid glucose; and they are right, for they have tasted the cheap article.

Prof. Kedzie has found that solid glucose, made into syrup, is as sweet as the liquid glucose of commerce, because he has tasted a sample of solid glucose imported, or made for the purpose of being used for a sample.

I will try to send Prof. Kedzie a sample of solid glucose such as is sold by the barrel, so as to know exactly what it is.

In the Italian bee paper (*Apicoltore*), I notice in the report of the 23d Congress of German and Austrian Bee-Keepers, held in Pomerania last September, that the question of feeding bees was fully discussed by twelve of the best bee-keepers of Germany, such as Dzierzon, Vogel, Dathe, Lehzen, Hübner, and others; every method used to feed bees in spring was advocated—honey, sugar, compounds of sugar or honey with eggs, milk, wine, flour, &c.; but in vain have I searched for grape sugar or glucose. It was not even mentioned.

If glucose was tried twenty years ago, it has been altogether abandoned by German bee-keepers; although in

Europe sugar is dearer and glucose cheaper than it is here. It is imported from Europe to this country. And yet, the editor of a bee paper is the champion of a matter discarded as worthless trash by the bee-keepers of Europe, calling it one of the "greatest discoveries" of our age. He also asks us to prove that glucose is worthless for bees. Our proofs are made. Glucose is held everywhere as a poor article of diet. It is for him to prove that all the chemists, as well as the foreign bee-keepers, who have abandoned it after trial, are in error. Instead of giving this proof, he did not even dare to give both sides of the discussion of the question, knowing that the facts would result in its condemnation.

Hamilton, Ill.

For the American Bee Journal.

Chips from Sweet Home.

BY D. D. PALMER.

In answer to many inquiries about our car-load of honey, please let me say: I had 12,000 lbs. of honey; 3,000 of which was extracted. My neighbor, Mr. Scudder, had 8,000 lbs. of comb honey. We jointly bought about 3,000 lbs., making a car-load of 23,000 lbs. We took it to Toronto, Ontario, costing us (including duty) delivered there, nearly \$500. It arrived in very good condition.

We have done our level best for two months, and have sold only a little over one-half of the lot.

We count ourselves good peddlers, especially of honey, but there were two reasons (hard times and glucose) why we did not sell more. Toronto has 400 groceries; two-thirds of these were handling, in glass jars and tin cans, a mixture of honey and glucose labeled "Honey;" an occasional taste satisfied me that it contained from a quarter to a third of honey and the balance glucose.

If we cannot get a law against the adulteration of sweets, I for one, will quit bee-keeping and go into fruit raising.

Dealers with few exceptions handling adulterated honey and jellies know that they are not pure. C. Palmer, a bee-keeper of Dundalk Station, Ont., and I, concluded to see what we could do in regard to adulteration. We soon found that Ontario had a law on adulterations of all food; for the first offence of manufacturing or selling such, \$100.00. Second offence (I think) 6 months imprisonment and \$100 fine.

We found that dealers knew what they were handling and were equally

culpable with the manufacturer of that stuff. We reported several of them to A. Brunnel, Commissioner of Inland Revenue, Ottawa, Ont. He sent notice to Toronto for them to take samples, etc. We were shown and told by the officials that nearly all kinds of food were adulterated, that very few analyzed were found pure, and now honey was added for the first time in America.

Brother bee-keepers, wake up and sign the petitions to Congress, getting all you can to sign them. Write to your Congressmen and continue thus until we have a law to protect ourselves from frauds in food, as we already have a law against frauds in money. If the counterfeiters of money injure the public wealth, the counterfeiters of food injure the public health. When we as bee-keepers, get a law passed which will protect us, we must report every case of adulterated sweets, each one watching his immediate vicinity.

New Boston, Ill.

• • • • •
For the American Bee Journal.

Queens Mating in the Hive.

BY H. L. JEFFREY.

In the November number of JOURNAL, Mr. W. Emerick's mention of his wingless queen leads me to pen the results of what were at first accidental, and I afterwards tried as experiments. I had tried most of the plans given for artificial fertilization with but little satisfaction until 1876. In September, I sent to Mr. Vaughn for two queens; one of them I introduced into a full colony; the other I put into a two-frame nucleus, to keep till I should get time to drive a swarm from a populous black colony in a box hive. One of the frames in the nucleus contained brood; the other was empty comb, with a patch of drone in the center, perhaps 200 cells; this had eggs in as well as the worker, and the brood was well capped and was perhaps two weeks old; they had a fight and I shut the entrance to admit but a single bee at a time. In a few days I examined and put in a bottle feeder. I noticed that the queen was gone and a queen cell had been started about two days. Then I shut the hive up tight, to see how long they would live. It was nearly or quite the 1st of October and I did not go near them again for between two or three weeks when I again opened it and found eggs deposited regularly in the worker comb. I watched the larvæ until it emerged, and all were workers. This was accident number one.

Accident number two was an extra

light-colored queen that I clipped the wings of, so that I might try drones from a virgin queen, and she fooled me by mating, and in 1877, I sent to Mr. Vaughn, for 12 queens for parties that had never tried introducing; they arrived Saturday afternoon, too late to be introduced, so I put 6 of them into some nuclei that I made out of 2 black colonies to keep them till I could notify the parties they were ordered for. After I took them out, I put some combs into two of the hives to shut them up from moths and mice, and I left the few bees that were in hives and a handful of drones to keep them as long as possible, that I might have them a few weeks afterward; both hives reared queens and mated in the hives. In both cases I nailed fine wire over every entrance and ventilation, making it impossible to get in or out.

During the past season I tried it three or four times with success, though I can re-call but one failure out of either 8 or 9 experiments and accidents. I do not consider it anything that can be made of practical use, but I shall continue to try experiments. Will Mr. Hasbrouck please tell us why it is necessary to put the queens into hives to let them lay, as long as he knows that they are mated? Woodbury, Conn.

• • • • •
For the American Bee Journal.

The use of Glucose for Adulteration.

BY A. E. WENZEL.

With commendable virtue you reiterate and proclaim against the use of what some would call an estimable quality of glucose, at times palmed off for honey—by some whose elastic consciences are only to be compared by the size of their ravenous pockets. Prof. Kedzie, of Michigan (by the way Michigan furnishes many whose impulses dictate the real good of the general public—vide Heddon's article on "Dealers in apian supplies" in Feb. number), hits quite an effective rap on the head of the growing (we would we could say, waning), monstrous evil.

It grieves us to notice the too easy virtue of one of our largest dealers,—whose business connection with the world at large is renowned—apologizing for the use of glucose in honey, because people, "will buy, a mixture, and are now putting a notice upon every jar packed by them, they believe the consumer has a right to know just what he is getting!" Very good, if this be done honestly and in good faith, very little complaint could be offered against the



practice. But, where then are the consumers coming from?

Pure glucose, and glucose (commercially) may be two different articles (not unlike pure milk and swill milk) which remains to be seen—even if a small per cent of deleterious substances by long time consumption may prove injurious to the system or like the apparently pure mountain streams of Switzerland, when no dubiousness exists as to their purity, those who long use it, and are accustomed from infancy with its slaking waters—it is well known that to them it occasions the disease commonly known as the rickets producing malformations in large heads and humped backs. We would that the same might be said of those who handle glucose for purposes of adulteration that they might “get a head put on them,” or a hump on their backs.

We had better remain obscure, and poor, in innocence and virtue, than have notoriety gained through fraud and corrupt practices.

Callicoon, N. Y.

For the American Bee Journal.

The Transportation of Bees.

BY L. C. ROOT.

In your January number A. E. Wenzel asks an explanation of a statement made in an essay read by me, at our last National Convention. I there stated that “in purchasing bees, if they are transported long distances, they will be benefited by the shipment.”

Mr. Wenzel asks “why so?”

During the past 10 years I have purchased bees quite largely, nearly every spring, transporting them various distances, from 1 or 2, to 150 miles. Having the purchasing and shipping under my own immediate supervision, I have been able to observe conditions and results very closely.

I formerly thought it most desirable to procure bees as near home as practicable, and move them in the evening or early morning, with as little disturbance as possible. It, however, became necessary to procure them from distant sections, and when such colonies were placed in our apiaries, the degree of activity with which they labored, as compared with those which had not been moved, but were equally strong, was at once noticeable, and very decidedly in favor of the former. Examinations from time to time indicated their superior progress.

Now, as to the question, “Why this benefit?”

Had I been able in my “Hints to Beginners” to have given directions for moving bees, I should have urged the necessity of supplying water during transportation. In observing their condition after moving them, I find that water so taken has been used for diluting honey, and that the queen is thereby stimulated to deposit a larger number of eggs, the same as when taken from the cellar in spring, only to a more marked degree. When moved at the proper season, this item will be found quite important.

In shipping bees by rail, it has usually been my practice to ride in the car with them, and I have observed particularly the efforts of the bees to get rid of whatever was obnoxious to them. The agitation caused by the motion of the car would start the moth-worms from their galleries and hiding places, and the bees would be seen trying to eject them and portions of their galleries and cocoons from the hives. There are also numerous minute pests of the hive that it is reasonable to suppose may be dislodged during such excitement and disturbance.

Those who have noticed the advantage to a colony gained by transferring, will, I think, readily see the benefits above named. I mentioned this idea in the essay referred to, more especially from the fact that most beginners think as I did, that the value of bees must be necessarily somewhat impaired by long journeys.

My point is, that instead of this apparent objection being a hindrance to the pursuit of bee-keeping, careful investigation will prove that they may not only be moved long distances with safety, but with positive advantage, if proper care is exercised in other respects.

Mohawk, N. Y.

For the American Bee Journal.

Hive Register.

BY J. V. CALDWELL.

Some kind of a register is needed, instead of using book and pencil, &c., to write on. I have made one which I think practical, not however claiming perfection, but, as I think, it is a step in the right direction. A brief description will perhaps be of use. It is all arranged on a card about 6 inches square. A circle with the days of the month on the inside, will record the following operations and the date on which they occur: Swarmed, divided, queenless, young queen, laying, cell, eggs, black, hybrid, Italian, box honey, extracted, &c.

I at first thought that these could not all be run together and had arranged them in six circles, but upon the suggestion of G. M. Doolittle I changed it to the present form. I will use tin hands, and after swarming time the hands may be used to inform us concerning other operations, as we do not expect surplus from queenless colonies, and thus by a little thought the one register may be used for all the principal work with the bees.

Cambridge, Ill.

For the American Bee Journal.

Queens Duplicating Themselves.

BY A. F. MOON.

Since my proposition, made in the *AMERICAN BEE JOURNAL* last September, it appears that no advocates of the above theory have defended their unvarying "Princesses," although it was most emphatically claimed by one that he bred such by the hundred. At the time that proposition was made I had not the least idea that it would be accepted, unless it was by some one unacquainted with the nature and character of the Italian bee. The profound silence, and what has already been said to establish this theory of queens duplicating themselves every time, reminds me of one of those "golden opinions" expressed by one of old, that he was dogmatic at 20, an observer at 30, an empiric at 40, but at 50 he no longer had any "system."

I have never assented to authority, however high, when it contradicts my own experience. If truth manifests itself anywhere I do not seek to smother it with glossing, or try to hide it, but I acknowledge its greatness and esteem it for its victory. I had about concluded to double and triple my proposition, but if the one already made cannot find even one among the hundreds that will defend their theory, your readers no doubt will consider the matter settled.

SHINING BLACK QUEENS.

In the *AMERICAN BEE JOURNAL* for October, Mr. J. D. Slack, of Louisiana, says that the statement made by some about shining black queens puzzles him. He wishes to know if they were bred from light or dark-colored queens. We have seen them appear in both, and from the best apiaries in this country. All that is necessary to know in this matter is first to understand whether the Italian bee has any fixed type, and that is so well understood that it is unnecessary to repeat it, but fearing some beginner will ask, we repeat that we want our

queens to breed their worker progeny uniform in their markings—*i. e.*, with the three distinct yellow bands. If they do that, we think it fills the bill; if they do not, we do not want them. If a queen is impure, it is easily detected by the apiarist, as some of her workers will be imperfect in their markings.

UNTESTED QUEENS.

It was with much pleasure that we read in the proceedings of the conventions the resolutions passed in regard to queens, purity, &c. This shows that there are yet zealous men in the field who are working for the advancement of practical apiculture. Could all be induced to raise the best, and send out none until tested, then we should have great improvements in breeding the Italian bee.

I see that my old friends, Cook and Heddon, did admirably in regard to cheap queens. It is my candid opinion that far more injury has resulted from sending out cheap untested queens, than from all the impure, or those tested and sold for pure, ever reared. All queen-breeders should raise nothing but the best, and send them out tested and reliable. I am glad to see that bee-keepers begin to appreciate this, and hope they will permanently decide this important matter.

Rome, Ga.

For the American Bee Journal.

Early Spring Dwindling.

BY MOOSH AMIEL.

I stated in an article on page 75, March, 1878, that I had not experimented with the device there suggested, but did so immediately after they had a good purifying flight. Here let me give the result of a thorough experiment just tried for dysentery. They will not discharge themselves at all, the area of flight is too small; so, for that purpose, the cage is of no value, and it could not be well made large enough if fastened to the hive. One of from 6 to 10 feet square might give them a flight sufficient for purification. This being so, we will not attach the cage until they have had this flight, but be sure to get it on before the bees have had a taste of honey or pollen from early blossoms, as herein lies the mischief; once having had a taste, they are tempted out, get chilled, and are lost. I am of opinion that this is as much, if not more, the cause of spring dwindling than the natural death of the bees from old age. The cage 13 or 14 inches square will be ample in capacity.



The passage-way from the hive to the cage should be near the lower corner of the wire-cloth or cheese-cloth to admit the light in the side nearest to the passage-way; mosquito-bar will not answer.

At any time, by excluding the light except at a small corner near the entrance to the hive, the bees will fly at once to that light which will bring them nearest to the entrance of the hive; they readily find their way in. As stated a year ago, an entrance for the hand, for the introduction of feed flour, meal, honey or syrup, should be made.

Nine colonies were experimented with last spring, seven by myself; and it was a success in every case. The bees will be uneasy, but it will not injure them, as we gave them a good purifying flight before confinement, and they will have but about a month to stay and we can quiet them by excluding the light.

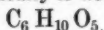
For the American Bee Journal.

Glucose.

BY A. W. FOREMAN, M. D.

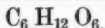
I suppose it is very generally known that there are three kinds of sugar. These are cane, grape and milk sugar, known to chemists respectively as sucrose, glucose and lactere. Let it then be understood that when I say glucose, grape sugar is meant, for they are but two names for the same article. Mr. Root errs when he gives them separate meanings.

Substances have two characteristics—chemical and physical. They are sometimes chemically the same, but physically very different. This is accounted for on the supposition that although they are known to contain the same relative number of equivalents, their molecules are differently arranged. This may be illustrated with starch and dextrine. Their formula is identical, and chemically is written as follows:



This means that each molecule of starch or dextrine is composed of 6 atoms of carbon, 10 atoms of hydrogen, and 5 of oxygen. Yet, notwithstanding their chemical identity, there is a very great physical difference.

This illustration gives us the starting point in the manufacture of glucose, the chemical composition or formula of which is



It will be observed that the only difference between this formula and that of starch or dextrine, is that we have here two equivalents more of hydrogen and one of oxygen. Now, throughout nature, whether done naturally or artificially, whenever two equivalents of hydrogen unite with one of oxygen the product is water, and its formula is



It can now be seen at a glance that if we can unite one equivalent of water with a given amount of starch, the product will be glu-

cose. It will be remembered that Mr. Dadant has pointed out that a mixture is not a chemical union. Hence, when water and starch are mixed you have *not* glucose; it is only a mixture of starch and water. Now add a small amount of sulphuric acid and apply heat up to 190° F., and in a short time the *physical* character of the starch is changed into dextrine. Continue the heat the requisite length of time, and a chemical change takes place, by which the dextrine unites with one equivalent of water, and the product is glucose. Now what office did the acid perform? Did it enter into the new combination? Not at all; for the acid can be reclaimed and it will be found to have suffered no loss. This illustrates a curious fact in chemistry. For some reason, not known, perhaps, two substances may be mixed and no chemical union takes place until a third is added, which causes an immediate combination of the first two, resulting in a product which does not contain a trace of the third. This is exactly the case when starch and water are mixed. No union occurs until the high priest, sulphuric acid, steps in and performs the marriage ceremony without becoming one of the party to the union. But Mr. Dadant, in the December number, says: "I am very far from being a chemist, yet I can see the difference between a mixture and a combination. In the manufacture of glucose there is a combination between corn starch, water and sulphuric acid." A statement entirely erroneous as to the essential fact. The acid is the bone of contention here, and Mr. D. would have us believe that it is one of the constituent elements of glucose. In so far as the acid is concerned, it is a simple mixture, and enough sulphuric acid could not be extracted from a thousand tons of glucose to kill a single useless drone.

Now, I do not wish to be understood as saying that glucose can be manufactured only in the way I have described. It is found all around us in great abundance; nearly all green fruits contain starch and are sour, and the process of ripening is mainly the conversion of this starch into glucose. Hence we find it in grapes, berries and other fruits. It is the chief sweet of flowers, and exists in great abundance in honey. It is produced incidentally in the manufacture of all malt liquors. Cane sugar is fermented and converted into alcohol and vinegar, but always first undergoing the transition into glucose.

We say of good bread that it is splendid; so sweet that it almost melts in the mouth. It is the action of the juices of the mouth upon the starch of the bread converting it into glucose, which gives to it its sweet taste. This action is so complete, that a small quantity of boiled starch held in the mouth only a few minutes, will be so completely converted into glucose as not to leave a trace of starch.

Glucose may also be manufactured in large quantities by the addition to starch of diastase or ferment, which does not contain any sulphuric acid certainly. It is also a fact, that brown sugar sometimes contains considerable quantities of glucose as an incidental product.

"But the lime, the poison gypsum; what

about that?" In the manufacture of cane sugar, the moment the juice is expressed from the cane, it is mixed with lime, and during the varying processes of refining, it is mixed twice more at least with it. Almost the last thing before the final granulation, it is treated to a dose of it. Mr. Root is not read up on sugar refining, or he would not have stated that blood and other offal of slaughter-houses is used. That is the old process, and in first class establishments has been superseded by lime. But you may ask is this sulphate of lime, gypsum? No, unfortunately, it is not. If it were, it could be much more easily removed, as gypsum is less soluble in water, and more permanent in chemical combinations, than any other form of lime. This whole controversy seems to be based upon the idea that glucose necessarily contains lime and acid. As cane sugar is so liberally dosed with lime in its manufacture, considering the vast quantities of it used, we might expect to see great evil resulting from it, but certainly nothing of the kind occurs, for two reasons chiefly.

First, because lime when taken in small quantities as a mixture with food is harmless. And in the second place, there is none left in the sugar to eat. Now, then, the important question is, are these agents more difficult of removal from one sugar than from another?

The question only needs to be stated to show its absurdity. If the manufacturers of glucose fail in this matter, and thus do not give us pure glucose, let us not buy it; and if there is any demand for it, somebody who can and will produce a pure article will supply that demand.

We have Mr. Dadant's quotation from Bloxan to show how easily we can detect the sulphate of lime, and if any one is imposed upon the second time by the same manufacturer, it will be his own fault. He also states that the best chemists of France, England and the United States say that glucose always contains more or less sulphate of lime. This would be a very foolish statement for those wise men to make, as it is sometimes manufactured without the use of lime or acids. I have examined a few authors, and have not found one who makes any such statement. Such authors as Towne, Youman, Gregory, Bowman, Atfield, Wells, U. S. Dispensary, American Cyclopædia, and some others, make no mention of such mixture. I do not wish to be understood as calling in question Mr. D.'s statement; but as I have given the names of a few authors who do not mention the matter, will Mr. D. give us the names of the best chemists, with the title of the book and page where these statements can be found.

I fear Mr. D. scarcely does Prof. Kedzie justice in saying that he has found both sulphuric acid and lime in samples of glucose. If this statement has any meaning, it is intended to answer Mr. Root, when he says they cannot exist in an active state in the same substance at the same time. That this statement is true no one knows better than Prof. Kedzie. What the Professor found was sulphate of lime and sulphuric acid, and the reason the acid was there was because the manufacturer did not use chalk enough to neutralize it. Mr. D. also inti-

mates that glucose cannot be made with any acid but sulphuric. This is an error; it can be produced by the presence of almost any acid, or without acid at all.

But why all this outcry against glucose? Is it because unprincipled scamps are using it to adulterate cane sugar? If so, punish them. For whoever mixes them and sells them as cane sugar is a thief, and I am as willing and anxious to catch him as any one. I am willing to take any action that holds out any promise of curtailing this fraud. If we can find any legitimate use for glucose, we can easily get it pure. I have had that which was practically so.

On the 23d of October, 1877, I obtained from one of my neighbors, who was going to obtain some honey by the old brimstone process, some black bees. I prepared two hives, putting into each one three or four old dry combs and some frames filled with foundation, but not one drop of honey. I began at once feeding pure glucose dissolved in water. Each colony took in between 10 and 15 pounds. I examined them frequently, and found they had built their foundation out pretty well, and the combs were as hard as a board with the glucose, as it had solidified as fast as deposited.

Thus they remained until the 10th day of March, almost five months, without a taste of anything but glucose. On opening them at this time, I found that one colony had eaten up all their stock of glucose, while the other one had perhaps a pound left. I now gave each of them two frames containing some honey, and as a result of this dreadful poison on which these bees wintered, for 25 lbs. of glucose I received \$25.00 worth of honey, and have the same colonies yet healthy and prosperous.

Now, Mr. Editor, how can you explain these facts? In the December number of the AMERICAN BEE JOURNAL, you speak of a minister who lost eight colonies, and another man who lost several hundred colonies by feeding glucose. Shall I say I don't believe glucose did the mischief? My evidence is positive. I fed glucose. My bees lived on it exclusively all winter, and came out strong and healthy; therefore, it is not poison, and it follows that those who fed glucose and lost their bees, either fed impure, poisoned glucose, or their bees died from some other cause. It also follows that if my glucose was pure, others can have it pure. I will venture the assertion that nine out of ten of those who have fed it, have not noticed its "killing effect" on their bees. I have no special fight to make for glucose. I have no use for it except to feed weak colonies late in the fall.

Whitehall, Ill.

[Dr. Foreman answers his own questions. The glucose of commerce and the pure article are two different things. Our testimony on the other side is just as positive. We had both from eye witnesses, and no more doubt it than we doubt our existence. The clergyman is an unimpeachable witness. The killing of several hundred colonies by it is just as positive. We were personally told by the man who mixed and fed it to



them. It was $\frac{1}{4}$ honey and $\frac{3}{4}$ glucose. If the Doctor's glucose was pure and not poisonous, certainly that used by the other parties cited was poison most *deadly*. In the language of Prof. Kedzie let us repeat: "Truth, crushed to earth, shall rise again; the eternal years of God are hers"—but grape sugar that is to 'rise' must be far better than that for sale in the markets to-day."—ED.]

Our Letter Box.

San Bernardino, Cal., Jan. 4, 1879.

The January number of your valuable BEE JOURNAL is *splendid*. I always read the JOURNAL with a great deal of interest. I rejoice greatly that you have taken such a *determined* stand against the adulterators of honey.

A. W. HALE.

Hokah, Minn., Jan. 29, 1879.

My 10 colonies are wintering well in a dry cellar. I am feeding them with sugar syrup. Why do bees leave their hive when it contains 4 or 5 pounds of honey? I lost one colony in October, by their leaving it thus. On examination, not a bee could be found in it.

WM. LASSING.

[Bees leave the hive in the manner described, from several causes; such as disease, queenlessness, &c. In all probability the case mentioned was caused by queenlessness.—ED.]

Aurora, Ind., Jan. 27, 1879.

Though the weather has been very cold, and many bee keepers have suffered great loss, yet I find the most of my bees in a good condition. I have cushions made of southern moss which I put on my hives, and it is the best winter covering that I can find. It is warm and I think draws all the dampness out of the hive. I lately opened one of my hives and found brood in all stages, and the queen laying. SIMON HUMFIELD, JR.

Hagertown, Ind., Jan. 21, 1879.

I have a good dry cellar under my dwelling where I winter with success, seldom losing a colony. The only objection to wintering in the cellar is carrying in and out. I finely overcame that laborious task. My work shop and honey house is built on a bank; the building stands about 7 feet above the plot of ground below. I dug out a cellar under the building, 18x27 feet, and walled it up with 18 inch walls, which are frost-proof. I constructed a railroad to run my bees into the cellar; the bottom of the cellar being on a level with the bottom of the yard. I can run them in now with ease and fill the cellar in 30 minutes. When all the cars are filled, they hold 112 colonies; the car holds 14 colonies at a time. I feared it would jostle the bees in running in on the cars but I find it does not disturb them as

much as carrying them in. I now have 107 colonies in the cellar apparently doing well. I work principally for comb honey and I try to get it in good shape for the market. Have no trouble in disposing of it; and sometimes I cannot supply the demand.

S. N. REPLOGLE.

Wilmington, N. C., Jan. 28, 1879.

My bees are to-day bringing in pollen of some description, very lively. The article gathered is white, and somewhat resembles white flesh. What can it be gathered from? My bees have considerable young brood in every hive.

R. C. TAYLOR.

[An examination of that brought in by the bees, as well as the local pollen producers would be likely to decide the question. We are not conversant with the plants and shrubs of your locality to decide with certainty.—ED.]

Lavansville, Pa., Jan. 28, 1879.

I have been unable for some time to answer correspondence, or do anything else. That fearful disease, diphtheria, swept away our six children, that heretofore were always in blooming health. Our three boys and three girls were all taken down at once, and all died within 11 days. My heart is filled with sadness but he who said, "suffer little children to come unto me," knows best. I trust they are now feasting on Celestial honey, perhaps in company with our venerable Quinby.

"Far in the distant heavens they shine,
But still with borrowed lustre glow;
Saviour, the beams are only thine,
Of saints above or saints below.
For them no bitter tear we shed—
Their night of pain and grief is o'er—
But weep our lonely path to tread,
And see the forms we loved no more."

I hope the readers of the AMERICAN BEE JOURNAL will never suffer such a sad bereavement.

H. H. FLICK.

Navasota, Texas, Jan. 27, 1879.

My bees are all bringing in pollen, and have been ever since our last cold snap a week ago. It is a wonder among all beekeepers where they are getting it—there is no shrub in this country that is even budding yet. Would like to know where they are getting it.

M. M. CAMP.

[If no flowers are budding—there is perhaps a flouring mill within 4 miles, from which your bees got pollen.—ED.]

Westfield, N. Y., Jan. 21, 1879.

I had 16 colonies in the spring of 1878; they gave me a good yield of honey, and an increase of 18 colonies. I sold all but 25, because I could not get them into my winter house. I think it is too risky to try to winter out of doors here. My bees were housed on on the last day of November. I examined them yesterday and found them in the best of condition. Bees along the lake shore did well; honey this year sold for a fair price. I sold my box honey for 18 and 20 cents per pound; extracted at 10 cents readily. I shall extract more next season. I think I

can create a home market for all the honey I can raise. I shall try to get my neighbors to put up honey in a more marketable shape, for it will help the market.

FRANKLIN HARDINGER.

Port Gibson, Miss., Feb. 10, 1879.

The BEE JOURNAL has been of great help to me in managing my bees I could not do without it. The year of 1878 was a hard year on bees and bee-keepers in this section. Early in the spring we had the fruit prospects for a large honey harvest, but a sudden change in the weather blighted all our hopes. I had to leave my bees during the epidemic of yellow fever, and on my return home I found that I had lost several colonies. The winter has been the coldest ever known in this county, and most of the bees in this county are dead. I am feeding daily. I see that bees are gathering pollen. Nearly all of my section boxes are full of nice comb, left over from last year, shall I leave them on the hives, or take them off until later in the season? I am afraid if I leave the boxes on full of comb, that the queen will enter and deposit eggs in the section boxes. I thought of putting empty boxes on so as to get new comb in the sections. What would you advise. R. M. HASTINGS.

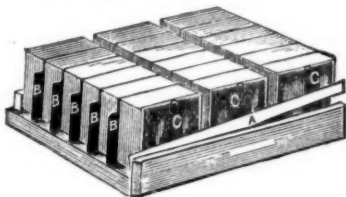
[Boxes should not be left on the hives when the bees have no need of them for storing honey. They will not build comb in the boxes unless they need it.—ED.]

Shelbyville, Ky., Jan. 27, 1879.

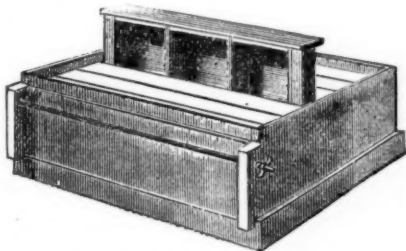
Please give us some information about taking honey from the Langstroth hive in prize boxes. I see no trouble in these boxes as used in the second story, or comb honey racks, but all the devices that I have seen without exception ignore the fact that a section of prize boxes when suspended in the lower story of a Langstroth hive, near the brood nest, fails to reach the bottom by several inches. I have thought of filling this space with a block of wood cut to fit, but I think that all such expedients should be avoided, if possible. In view of the fact that the prize box seems to be accepted as a standard, would it not be better to have the frames in the Langstroth hive to run across rather than in the direction of its length? The reason of the suggestion arises out of this fact, unless the colony is a large one it is apt to fill one end, if not one corner of the hive only—thus large spaces are left vacant—and these vacancies in winter are very cold—I have not obviated this objection by adjustable boards or cushions for the reason that the stores contained upon a few combs, perhaps imperfectly filled, would make the chances of wintering hazardous. It seems to me that a shorter frame with division boards would compact a colony in better shape for winter, for breeding, and for the formation of comb. I have during the past year seen quite a number of colonies in standard Langstroth hives, with whatever comb they had built—at the ends of the frames and extending one-half or at most two-thirds of the full length of the frame—thus leaving either in the front or rear a large vacant space. Of course this should

not have been, but I suppose the colonies being those of the current year (1878), and the season being a poor one, the bees under the circumstances could do no better; but if the frames had been shorter, would they not have done better? The Langstroth hive in this part of Kentucky is the standard. Is not the subject of transplanting queens' larvæ a process of great practical import, and would it not be well to bring it to the front for a season's experiment? Would not a collection of the known facts upon the subject of fertilizing queens in confinement probably lead to a general effort in that line during the season of 1879. W. M. ROGERS.

[We do not advise the use of surplus receptacles in the brood chamber. There are better and simpler methods of applying them. One, is that mentioned several times in the JOURNAL, by the use of the comb honey rack. (See cut).]



Another is by the use of cases as illustrated on page 113, of this JOURNAL. Seven of these fill a story for the Langstroth hive, and can be lifted on or off all at once with ease. (See cut).



Seven-inch Story for Seven Cases.

Another plan may be seen illustrated in our next JOURNAL, as used by Mr. James Heddon.

Bees are in more danger of starving in winter with plenty of stores in the hive, where the frames run cross-wise, as they cannot pass *en masse* from one range of comb to another. We prefer the frames to run lengthwise, but some use them as you suggest with success. Among these we may name Mr. G. M. Doolittle, Prof. Cook, Messrs. Oatman & Son, Mr. Roop, &c., &c. It is not possible, nor is it desirable, to force all minds into one channel. There

will be a corps of bee-keepers at work on each and every problem, in numbers according to the necessities of the case, and all the progress of our pursuit will be carried along together.—Ed.]

Martinsburg, Mo., Feb. 5, 1879.

I believe there will be a "big" loss of bees this winter, from scarcity of honey—a disposition in almost all to divide, making too weak colonies—and then the very cold winter. Most have wintered on summer stands. I lost one (the best of 14), plenty of honey and had same fare as others—on summer stands. Cause, I do not know.

E. R. DOUGLASS.

Wayne, Mich., Jan. 28, 1879.

King-birds or bee-martins seem to be extremely curious in their tastes and habits; their maws are always well filled with rose-bugs and other insects in the morning, but never have any part of a honey bee until drones fly, say from 9 a. m. until 4 p. m.; neither are they about the apiary until drones fly, late in the morning. This is curious. They may catch queens, I cannot say—can you? I will take the chances and save every king-bird and house-wren to catch drones and bee moths. The king-bird will perch on a dry limb at the apiary in the morning and finding no drones will leave until they are out. MOOSH AMIEL.

[In all probability many of the birds that have caused more or less apprehension to bee-keepers are rather more of friends than foes. No doubt the species you mention are of more good than harm to us.—Ed.]

Chillicothe, Mo., Feb. 4, 1879.

I purchased three colonies in the fall of 1877 which wintered well. One being in a box and two in movable frame hives, (one being the Quinby), I now use a hive 16½ inches long 14¼ wide and 20 inches high containing eight frames. My increase last year was eight, four by artificial and four by natural swarming. The first artificial colony I made in June 1878 by transferring those in the Quinby to 2 of my other hives. I had eleven colonies to go into winter quarters with, eight strong and three weak ones; the latter made only six combs, and stored only 20 to 25 lbs. of honey owing to the fall crop being cut short by drought and early frost. I had 125 lbs. of honey in the comb. I prepared my bees for winter in the latter part of November by placing a quilt over the honey board, leaving a hole in the board for the escape of moisture and filling the cap with chaff, and left them on their summer stands. They did not come out until the middle of January; since then they have had several flights the weather, being warm most of the time. They all but one seem to be in good condition. I do not think I have lost more than a pint of bees to a colony. This is my first year's experience in bee-keeping. I have not succeeded as well as some, yet I am not discouraged. I love my pets as much as ever, and hope to succeed as well another season. Last Monday when the bees were flying I opened a hive which

was troubled with moths, after taking up three or four frames I found the queen hanging on the comb apparently lifeless and forsaken by the bees, there being none near her. I picked her off the comb and held her in my hand a short time; finding her alive I brought her in the house and she soon revived. I then replaced her in the cluster of bees and they welcomed her as though she had been absent a long time. I do not see how she could chill in so short a time, not being over six or eight minutes. She is a year and a half old. The hive now contains sealed brood. I want to know what you think was the cause of her being forsaken by the rest of the bees. Do you think she was diseased or chilled?

F. S. THORINGTON.

[Probably chilled.—Ed.]

Los Angeles, Cal., Jan. 26, 1879.

If a bee ranch be situated on or near an extensive sulphur spring, will the sulphur do any harm to the bees? If pure water was obtainable would the bees go to it instead of the sulphur water? Or if there was none but the sulphur water would bees do well on it? Which do you consider best for California bee-men to use, barrels, 20 gallon, or 5 gallon coal oil-cans, for Eastern and European markets?

F. C. HAZEN.

[We never heard of the experiment of giving bees sulphur water having been tried. If any one has done so, we should be glad to have them answer the question. As to the package for shipping honey from California—many coal-oil cans have been used, protected in a half-box. But both ways will be utilized hereafter as heretofore.—Ed.]

Reisterstown, Md., Nov. 19, 1878.

In queen rearing I cut worker comb, (containing eggs or just hatched larvæ) down till it looks like foundation, then "stick" little hollow cylinders of wax (like thimbles without any tops) ½ inch deep, exactly over the eggs 1 inch apart; hang in a queenless colony. You can have as many queens as you prepare eggs for. Make these cylinders from natural comb, for I believe wax loses its organized structure, (not organic composition) when melted. In the absence of a better illustration, I will say, the change is somewhat analogous to that which takes place when the fat of a hog is "rendered" into lard—the same thing, yet different in structure. I have reason to believe that bees can recognise this difference, and fearing that all is not right, refuse to work as desired—am afraid this will account for the failure of many artificial operations in queen rearing. The thimbles can be made by pressing comb in a plaster cast of a natural queen cell. (How will this tally with the theory that the sex depends upon the cell?) I took a black queen, put her on a block, and covered her with a thin clear tumbler; in crawling about she laid about 20 eggs, which I put, with a feather, into empty cells and hung in a nucleus hive. From these eggs, they raised a queen and 6 workers.

F. DELLA TORRE.

Enfield Centre, N. H., Jan. 10, 1879.
I have been reading Cook's new "Manual of the Apiary," and think it the best of our American works. LEWIS T. COLBY.

Sherman, N. Y., Feb. 6th, 1879.
The winter here has been a severe one, but I have yet to hear of any bees being destroyed. Our farmers about here are not so extensively engaged in bee-culture as in other parts of Chautauqua county. I consider the AMERICAN BEE JOURNAL a good bee paper, and wish the publishers success. M. L. DORMAN.

Monroe, Mich., Oct. 6, 1878.
I have just read the sixteenth annual report of the Michigan State Board of Agriculture, and was pleased with Prof. Cook's trial to plant food for bees, but do not find among the plants our milk-weed, which grows on any soil, no matter how poor. For hundreds of years the *Asclepias corunt* and *incarnata* have been planted in Russia for this purpose, and these flowers always swarm with all kinds of insects, among which the bees are the most frequent. As these plants blossom at a time when the earlier flowers are getting scarce, they are so much the more welcome. The Russian peasants, although Christians for many centuries, pray yet to the bee-god, and offer him on a little altar, honey and wax, concealing it from the eyes of his pope or archimandrite, who would punish him for his superstition; but with the help of his bee-god and the asclepias, sowed on all waste places, he expects a rich harvest of honey and wax. E. DORSCH, M. D.

[Prof. Riley, when he advised sowing milk-weed or asclepias to entrap and kill the bees, was no better informed in this matter in relation to his own native Europe, than he was in the United States. Dr. Dorsch is right; asclepias is a valuable honey plant, as I stated in my "Manual," page 232.—A. J. COOK.]

Fort Atkinson, Wis., Jan. 22, 1879.
I put into my winter house 65 colonies, most of them with plenty of honey, but of rather poor quality. They weighed in 8 frame Langstroth hives, with cap off, from 50 to 73 lbs; weight of hive 23 to 25 lbs. I keep the temperature as near 40° as possible; they are very quiet and I think the prospect for them is good. L. M. ROBERTS.

Seymour, Ind., Feb. 6, 1879.
Success to the AMERICAN BEE JOURNAL. I don't see how any bee-keeper can afford to do without it. I consider every number worth the subscription price, so you may consider me as belonging to the JOURNAL family. I have been a keeper of bees from boyhood up and as everybody it is said, rides some "hobby," my "hobby" has been bees. I have had the Italians for the past five years and must say that in their purity they cannot be spoken of too highly. And as there is considerable talk about purity at present I have concluded to send to six or

more of the leading queen breeders and see if there is any material difference in them, and report my opinion through the columns of the BEE JOURNAL. Of course I shall inform those I order from of this intention and will give a fair and candid report. The past few years I have been breeding from queens purchased of Oatman & Sons, of Dundee, Ill., and R. M. Argo, of Lowell, Ky. I am not keeping a large number of colonies, have been limiting my number at 25, as I have been living in the city but have lately purchased 12 acres immediately adjoining the city of Seymour, and expect at least to be able to attend double the number I have now, and shall be happy to entertain any of the bee-keepers who can make it convenient to call upon me after the 1st of September, as by that time I hope to complete my new buildings.

C. H. HANCOCK.

Swedesburgh, Iowa, Jan. 28, 1879.
This will be a hard winter on bees that were left out as mine are. Several of mine have died already. I calculated to put a part of my 80 colonies in the cellar, but I was taken with rheumatism in August. I tried bee stings, but they give no relief; I tried 3 at a time, but received no benefit. I tried a galvanic battery a week but could perceive no benefit from it. I had to wear it out by degrees. H. M. NOBLE.

Hastings, Minn., Feb. 3, 1879.
In May, 1878, I purchased 2 colonies of black bees at a cost of \$12.00; also material for 8 Langstroth hives and 100 section boxes for \$12.50. Total \$24.50. From them and the increase I have taken 425 lbs. of honey; 140 lbs. being comb, and the remainder extracted. I now have 6 good colonies in winter quarters. This is my first bee-keeping. C. O. BALL.

Bedford Station, Mich., Feb. 10, 1879.
The Southern Michigan Bee-Keepers' Association was organized at Battle Creek, on the 6th inst. A. D. Robinson, Pres.; B. Salisbury, Sec. Annual meeting first Tuesday in December. Quarterly meetings to be called by the executive committee at their discretion, at the apiaries of members. We took our bees out for a fly on the 8th inst; they are doing nicely. Those left on the summer stands are in poor condition. H. C. WILDE.

Sandwich, Feb. 3d, 1879.
Mr. Chapman asks how to protect an apiary from human robbers. He can protect his bees by building a fence around them so that a person cannot get through without climbing over the top, then string or put a wire on for the top rail; let this wire run loose through staples driven in the posts, and connect the end of the wire to a bell on the house. The moment a party tries to get in the yard they give the alarm. This is the simplest, cheapest, and the best plan I know of. I know it will work, for we had such an arrangement attached to our barn-door, and it saved us a splendid span of horses at one time, and at another some wheat, that a man wanted to get from a bin in the barn. [ALEX. WILDER.



West Sumner, Me., Feb. 15, 1879.

I started on a small scale with 2 good colonies of Italians. I put them in the cellar in good condition, but I find in one hive numbers are dying. I put a woolen quilt over the top of the frames and they are warm and have plenty of honey; the strongest colony has the most dead bees. Will going into the cellar with a light serve to kill them? Is it right to keep the bottom board dry and clean from dead bees? I have taken nearly one quart of dead bees from the strongest colony, while the other has none! Do I keep them too warm? Is it natural for so many to die through the winter?

E. W. CHANDLER.

[Premature death of the workers and dysentery seem to be quite prevalent this winter. If done very quietly, it will do no harm to clear the bottom board of dead bees once in a while. Some think it matters but little whether it is cleared or not. Light, or anything that disturbs them, will serve to aggravate the disease. About 40° Fahr. is a good temperature for the place containing bees in winter. Colonies cannot be injured by the use of a blanket. Very few bees die in winter, when all are healthy.—Ed.]

Winterset, Iowa, Feb. 8, 1879.

Many colonies have been lost in this section, owing to the long cold spell just passed. Some few hives were closed up by the frost, while some used up their honey and starved. Some have dysentery and foul brood. For two weeks quite a number have been rearing brood nicely—considering the time of year.

MOSES BAILEY.

Austin, Minn., Feb. 5, 1879.

I started last spring with 20 colonies in Langstroth hives. I divided them till I had 37, and obtained a little over 1000 lbs. of comb honey. I sold colonies down to 15, which are now in the cellar, wintering finely. The thermometer there has not varied 4 from 40° all winter. The season was not a very good one. Minnesota will be a good honey-producing state, for the soil is well adapted to white clover, which continues to bloom during the season. It also has a magnificent range of golden rod.

FRANK A. TICKNOR.

Fort Calhoun, Neb., Jan. 10, 1879.

Up to the present time my bees have passed the winter in good condition. I have about 90 colonies on their summer stands, in double-walled hives with one or more thicknesses of carpet over the frames and under the cap. I have about 20 colonies in outdoor cellar, so far, doing well. Bees did not gather a very large amount of surplus honey the past year, so that, in connection with the very low price of honey in the market (12 to 15 cents per lb.) the profits of bee-keeping have been rather small. Owing to the low price of honey it is ceasing to be looked upon as a luxury, and is becoming a staple article of consumption.

HIRAM CRAIG.

Visalia, Ky., Feb. 9, 1879.

I am wintering bees on their summer stands, by taking out all but from 4 to 6 frames of combs, using division boards and filling in between them and the walls of the hive with sawdust, and a sack of chaff on top. Although the thermometer at several times indicated 19° below zero, I have not lost a colony. How much drone comb, in proportion to worker comb, ought to be put in a hive in the spring, in ordinary circumstances?

F. B. THRELKELD.

[The less drone comb the bees have, the better.—Ed.]

Neosho Rapids, Kan., Feb. 3, 1879.

I began the season of 1878 with 6 colonies, 2 Italians and 4 blacks, which increased to 22 colonies. I got 300 lbs. of comb honey from my Italians, but none from my black bees. My bees had a good fly Jan. 18. I cleaned off the bottom board, and found 2 dead queens and 2 colonies dead, 1 frozen the other starved. I think the Italians better than the blacks. I increased by natural swarming. I would not be without the BEE JOURNAL for three times its cost. I think all who have bees should take it. I wish it success.

N. DAVIS.

Augusta, Me., Feb. 12, 1879.

The winter has been cold here. For 2 years the seasons have been poor for honey; the bees therefore are in poor condition for winter. Many bee-keepers here do not protect their bees from the cold; and such will lose many. Maine has but few bees, when compared with other states. Aroostook is a new county, but is noted for its honey and in it is raised more than in all the other counties of the state together. Success in producing honey lies in keeping all the colonies strong and in doing the right thing at the proper time. Success to the JOURNAL.

ISAAC F. PLUMMER.

Rulo, Neb., Feb. 7, 1879.

We have had a very long cold spell of weather. The mercury for several days was 16° below zero; and from the 14th of Nov., 1878, until the 20th of Jan., 1879, the bees were not able to fly. The entrances of such as did not face to the south froze up entirely, and a sheet of ice formed all round the inside of the hives, except where the rays of the sun struck them with the most force, preventing all egress, and rendering it necessary to remove the covers when the weather moderated. The inside of the covers was coated with ice, yet the cushions had protected the bees from the cold so well that we lost but 4 out of 221, and these were in hives in which the center frame was not well filled with comb, virtually preventing the bees from passing to the warm side of the hive and eventually they froze dead from the extreme cold. Symptoms of dysentery were developed in all the colonies, and had the weather continued cold, or had not the bees been released from the hive when the weather became suitable for them to fly, we should have had as disastrous results as formerly. I think hereafter we should put cushions on, not to absorb the moisture of the bees, but to

retain the heat; that hives should face to the south; that the entrances may remain open, and the bees be enabled to pass around the warm end of the frames on to other combs, when their supply of honey is exhausted, and that, when we select a site for an apiary, there should not be anything left to obstruct the rays of the sun in the winter; that the surface should be level and the hives near the ground for warmth with the rear slightly elevated in the winter to cause moisture to pass freely out of the hives. Bees arranged in this manner may, with little care, be wintered out of doors with the best of success, even if there are cracks in the hive wide enough to enable them to pass freely in and out and the hives are exposed to the severest weather.

JEROME WILTSE.

Coushatta, La., Feb. 5, 1879.

An incident occurred in our parish several years ago. I will give it as my friend, Mr. G. W. Singleton, a gentleman of undoubted veracity told it to me. He said: "Several years ago in the month of November, I took one of my hives and killed the bees, as I thought with sulphur. A little boy playing around covered up the apparently dead bees in a hole in the ground by putting some dry leaves on them and covering over with dirt, saying that next spring he would hive them. The following spring after a severe winter, I took a hoe on a warm day and uncovered the bees, and to my astonishment the bees were not dead and began crawling and flying around."

L. M. HOWARD.

[There must be some mistake about this, for bees could not live so long without food, even if they were not killed by the sulphur.—ED.]

Bell's Station, Tenn., Jan. 28, 1879.

Bees here are generally wintered on their summer stands; but this season there is a heavy loss. Some have lost one-half and others all of their bees. I have heard of but one bee-keeper in this neighborhood who has lost none, but myself. I examined my bees to-day and find plenty of eggs, capped brood and honey. If nothing prevents, my bees will be strong by the time of the first harvest. The BEE JOURNAL is a welcome visitor here.

JOHN H. SMITH.

Lawson, Mo., Feb. 12, 1879.

I started Feb. 10, with J. L. Smith to Kansas City to sell our honey, &c. We visited several bee-keepers while we were gone and found that they had left the bees on their summer stands and many have perished, and the dysentery ravaging the balance. Upon arriving home, I found my house and its contents a pile of ruins, having been destroyed by fire in my absence. Last fall I put 80 colonies in the cellar and packed 15 with straw, and they are doing well, only one showing signs of dysentery. I prefer the packing in straw for this climate; it is so easy to give them a fly on any warm day in winter. It has paid me well for the small amount of labor expended last fall in putting them up.

F. B. CAMPBELL.

Lansing, Mich., Jan. 21, 1879.

I most fully appreciate the honor of being appointed V. President of the National Association for Michigan. I believe the Association is a power for good in the country and may become even more so in future. I will do heartily what I may to aid. I congratulate the Society in its happy selection for President, which is a bright omen for its future usefulness.

Very truly,

A. J. COOK.

Youngsville, Pa., Feb. 11, 1879.

Allow me to express, through the medium of your excellent JOURNAL my acknowledgments of the honor conferred on me by the National Bee-keepers' Association, in electing me as one of its Vice Presidents, in, and for this noble old commonwealth, the keystone of the federal arch. Christianity and patriotism prompt me to feel a degree of pride in my native state, with its vast agricultural and mineral resources. Her mountains are filled with iron and coal, and her valleys pour out rivers of oil. I might modestly intimate how much of strength, warmth and light, she has furnished to the inhabitants of earth, but, as it would not be strictly a bee article, I will desist. When a boy, 32 years ago, my brother and I gave our five shining silver dollars for a colony of bees in a section of a hollow log, and brought it home in triumph; we little thought of the proportions to which the science of bee culture would grow, in these swiftly passing years. From the hidden wonders contained in those rude structures called gums and skeps, where we could only guess as to the condition of things within; with bees as dark as the shades of night and little honey fit for the table; we have passed to movable comb hives made in a workman-like manner and protected with durable paints, stocked with beautiful yellow Italians, and tons and tons, of white comb and extracted honey, free from pollen and some that we know of, is free from glucose, or any other abomination. It is this growing interest of our country that the National Association proposes to foster, and I therefore cheerfully accept the position assigned me, in the hope that I may do my part to add to its interest and usefulness.

W. J. DAVIS.

[We hope all the Vice Presidents will not only by every possible means help on our art, and develop its resources, but also will attend our next Annual Convention, which now promises to be the most important and interesting bee meeting ever held on the American Continent. We already have indications that it will be far more largely attended than any previous meeting.—ED.]

Jordan's Springs, Va., Feb. 6, 1879.

I have 94 colonies of native and Italian bees. All have gone through our hard winter without the loss of any. I would not give the Langstroth hive for all others combined. I sold all of my 1st, 2d and 3d grades of honey for 25c., 20c. and 15c. It goes to Washington, Baltimore, Philadelphia, New York, St. Louis and Chicago. I sent samples of my honey to the great fair at St.



Louis, in 1873, and took the highest premiums. I received a beautiful diploma. During the warm spell a short time ago, I fed my bees abundantly with partly ground rye flour; they consumed large quantities of it. It certainly keeps bees from robbing.

E. C. JORDAN.

Garland, Pa., Dec. 9, 1878.

I wintered 51 colonies but really began the season of 1878 with but 50, for one of the strongest came out queenless and was united with another. I think I killed the queen while changing the combs from one hive to another, late last fall. The yield of honey was not large, and I have to credit the raspberry and clover with all we have; the basswood failed to bloom this season, as it does each alternate year. I am experimenting in wintering on summer stands, some in chaff and others partly in chaff, with a glass window in the front of the large box to allow the sun to shine directly on the front of the hive.

JNO. F. EGGLESTON.

Westfield, N. Y., Jan. 21, 1879.

1. What is the reason of bees not going into boxes to work when the hive is full and there is a plenty of honey and bees?

2. How can I get my bees to build worker comb without the use of foundation? I have too much drone comb in some of my hives; if I take it out they will build drone comb as before.

3. Will it pay to raise queens where natural swarming is allowed?

4. Would you advise rearing queens from worker larvæ?

F. HARDINGER.

[1. If honey is plenty in the flowers, bees will generally work in the boxes readily, unless they have too much honey below. In that case, contract the brood chamber by using division boards, taking out some of the frames of honey.

2. The best combs are built by colonies not too large, and at times when the honey flow is not too abundant.

3. No; unless you wish to change the blood of your colonies. If you do, then change capped queen cells.

4. We prefer to start with the egg; if the very youngest.—ED.]

Richmond, Tex., Jan. 28, 1879.

We have no trouble packing bees in chaff or carrying them in cellars, in winter here. They are only confined to their hive by cold weather a few days at a time. Mine were kept in 3 weeks at one time this winter, but are now working lively on the wild peach that grows in our bayou bottoms. What a pleasure it is to the bee-keeper to see his bees come in loaded with pollen especially as early as January 24. Last season was a poor one with us. We had no honey of any consequence till golden rod and smart weed came in, of which there is an abundance in the bottoms. I had 70 colonies last fall, and lost but one, and that by robbers; all Italians. I tried comb foundation last season; I like the 1 lb. sections. I use the

Langstroth hive. Bee culture in our state is yet in its infancy, but ere long bids fair to compete with some of the older states; especially those so far north where the bees are housed 6 or 8 months out of the year; ours work 10 months.

J. W. ECKMAN.

Lincoln, Neb., Feb. 18, 1879.

Much has been said in praise of plants for their good honey producing qualities, when that is the only quality for which they deserve merit. The plants that will be most profitable to the average bee-keeper are those that are worthy of cultivation regardless of bees. Among these are buckwheat, mustard and rape, the latter of which is raised in large quantities in the western part of this state. In Buffalo co. it is recorded that 21 acres averaged 45 bushels of seed per acre. The price quoted in the Chicago papers was 2 cents per pound. Those who had raised it claimed it a better crop than corn or wheat as it brought a better price. Have not yet seen any of the depredations of the black flea upon it here. It secretes honey during wet seasons, comes in bloom soon after sowing, and can be sown from early spring until fall with good results. It is especially adapted to the Western countries where clovers and fruits have not become general, to obviate the spring dearth of honey plants and better prepare our colonies for the fall harvest. Last season its bloom seemed much fresher than that of Chinese mustard, and the bees sought it more eagerly, at the same time they took no notice of an acre of mignonette, which on account of wet weather secreted no honey. Buckwheat here is usually neglected by the bees, for during its bloom they find a better harvest from heartsease (*Polygonum persicaria*), golden rod, wild sunflower, and a number of other good honey-producing plants.

GEO. M. HAWLEY.

Henry and Wood Counties, O., Feb. 18, '79.

So far as I can learn from personal examinations and inquiry, about 50 per cent. of the bees are dead that were left out of doors. All right in cellars, so far.

DANIEL KEPLER.

Butlerville, Ind., Feb. 20, 1879.

Bees have died at a fearful rate in this locality. In most of the hives where the bees died, they left plenty of honey. Dysentery was the main cause. I for one am opposed to upward ventilation, and here is my reason. I find that those having upward ventilation are in bad condition, while those having no upward ventilation are in good condition. With the upward ventilation the heat of the bees passes off and cold air takes the place of the warm, and protracted cold brings on disease. Upward ventilation may do in warm cellars, where frost never enters. My hives were packed in boxes with dry leaves and straw. If this winter kills all of my black bees and those of my neighbors, I shall clean up the yard and commence with Italians. I esteem the BEE JOURNAL above all the bee papers I read.—All bee-keepers I have talked with are well pleased with it. I don't see how they could be displeased with it.

W. MARTIN.

OUR TERMS OF SUBSCRIPTION.

PAYABLE STRICTLY IN ADVANCE.

Single subscription, one year.....	\$1 50
Two subscriptions, sent at the same time.....	2 50
Three.....	3 50
Four.....	4 50
Five or more,.....each,	1 00

☐ If not paid strictly in advance, TWO DOLLARS per annum will charged in all cases.

Advertisements will be inserted at the rate of **20 cents** per line of Agate space, for each insertion, cash in advance. One inch measures fourteen lines.
Special Notices 50 cents per line.

A line will contain about eight words; fourteen lines will occupy an inch of space. Advertisements must be received by the 20th, to insure insertion.

Notice to Advertisers.—We intend only to advertise for reliable dealers, who expect to fulfill all their advertised promises. Cases of *real* imposition will be exposed, and such advertisements discontinued. No advertisement received for less than \$1.

Address all communications and remittances to

THOMAS G. NEWMAN & SON.

972 & 974 West Madison St. CHICAGO, ILL.

When changing a post-office address, mention the old address as well as the new one.

We send the JOURNAL until an order for discontinuance is received and all arrearages are paid.

We do not send goods by C. O. D., unless sufficient money is sent with the order to pay express charges both ways, in case not taken from express office.

In consequence of the dearth of small currency in the country, we will receive either **1, 2 or 3 cent stamps**, for anything desired from this office.

Strangers wishing to visit our office and Museum of Implements for the Apiary, should take the Madison street-cars (going west). They pass our door.

Additional copies can be made to clubs at any time at the same rate. Specimen copies, Posters, and Illustrated Price List sent free upon application, for canvassing.

Remit by post-office money-order, registered letter or bank-draft, payable to Thomas G. Newman & Son, so that if the remittance be lost it can be recovered.

We will send a tested Italian Queen to any one sending us **FIVE** subscribers to the **AMERICAN BEE JOURNAL** with **\$7.50**. The premium Queens will in every case be tested, but not sent till after July 1st.


Seeds or samples of merchandise can be mailed for one cent per ounce. Printed matter one cent for every two ounces. These must be tied up; if pasted, they are subject to letter postage. *Don't send small packages by express, that can just as well be sent by mail.*


For the convenience of bee-keepers, we have made arrangements to supply, at the lowest market prices, Imported or tested Italian Queens, Full Colonies, Hives, Extractors and anything required about the Apiary. Our Illustrated Catalogue and Price List will be sent free, on application.

We have gotten up a "Constitution and By-Laws," suitable for local Associations, which we can supply, with the name and location of any society printed, at \$2 per hundred copies, postpaid. If less than 100 are ordered, they will have a blank left for writing in the name of the Association, etc. Sample copy will be sent for a three-cent postage stamp.


Our answer to who ask credit is this: We sell on generous margins, and cannot afford to take the risks of doing a credit business. If we did such a business we should be obliged to add at least 10 to 20 per cent. more to our prices, to make up for those who would never pay, and to pay the expenses of keeping book-accounts with our customers—this we know our **Cash** customers would not think to their advantage.— This rule we must make general in order not to do injustice to any one. We must give all the same advantage to cash customers, while the credit system works to their injury. In justice to all we therefore require **Cash with the order.**

☞ We have agreed to attend the two Conventions in Kentucky, next May. One in Gainsville, on the 1st, and the other in Lexington on the 6th.

 A meeting of bee-keepers will be held at Lansing, Mich., on March 7th, for the purpose of organizing a County Convention. All interested in bee culture in that vicinity are requested to attend.

 The next annual meeting of the Northeastern Bee-keepers' Association, will be held in Syracuse, March 11, 12 and 13, 1879. L. C. Root, *Pres.*

By an oversight, on page 94 of the JOURNAL for February, the address of Mr. R. M. Argo, was given as Louisville instead of "Lowell, Ky." If any one answered that advertisement, and addressed to Louisville, they will please write to Mr. Argo again, at Lowell, Ky.

 The *Southern Farmer's Monthly* published at Savannah, Ga., is a model of neatness throughout, and it contains such a variety of matter that it is almost an indispensable article for the Farmers of the South. It is but seldom that we see a paper printed so nicely, and upon such elegant paper. We wish it success.

Mr. Wm. Clement, who has exposed the fraudulent transactions of Mrs. Lizzie Cotton, who has been swindling bee-keepers for years, wrote to a person at West Gorham, Maine, asking information concerning her. The answer says that her husband, C. B. Cotton, advertises in her name, and should be held responsible for all that is done whether correct or not. He should be compelled either to do business upon business-principles, or to be driven from the field of operation entirely. Complaints are numerous, and all should refuse to do business with him.

We supply the **AMERICAN BEE JOURNAL** and any of the following periodicals at the prices quoted in the last column of figures. The first column gives the regular price of both.

Gleanings in Bee Culture.....	\$2 50	\$2 25
Bee-Keepers' Magazine.....	3 00	2 50
The three Bee papers of U. S.....	4 00	3 50
British Bee Journal.....	4 00	3 50
All four—British and American.....	6 50	5 00
American Poultry Journal.....	2 75	2 50
American Agriculturist.....	3 00	2 50
Ohio Farmer.....	3 50	2 85
Moore's Rural New Yorker.....	4 15	3 50
National Live Stock Journal.....	8 65	3 15
Prairie Farmer.....	3 50	3 15
Scientific American.....	3 50	3 15
Western Rural.....	3 50	3 15
Science of Masonry.....	4 60	3 75



Honey Markets.

CHICAGO.
HONEY.—White clover, put up in single-comb boxes, in fair demand. Prices paid for such, 11@13c. When more than 1 comb in a box, 9@10c. Dark, in the comb, slow sale at 8@10c. Extracted Honey, white, 7@8c.; dark, 6@7c.
BEESWAX.—Prime choice yellow, 23@25c; darker grades, 16@20c.

NEW YORK.
QUOTATIONS.—Best fancy white comb honey, 12@15c; extracted, new, 7@8c; buckwheat comb honey, 10@12c; beeswax, prime, 27½c.
H. K. & F. B. THURBER & CO.

CINCINNATI.
COMB HONEY.—In small boxes, 11@13c. Extracted, 1 lb. jars, in shipping order, per doz., \$2.50; per gross, \$28.00. 2 lb. jars, per doz., \$4.50; per gross, \$50.00.
C. F. MUTH.

CALIFORNIA.
Quotations for comb honey are: White, 9@11c.; dark to medium, 7@8c.; extracted, 4½@6c.
STEARNS & SMITH, 423 Front St., San Francisco, Cal.

Local Convention Directory.

1879. Time and Place of Meeting.
March 11-13—Northeastern, at Syracuse, N. Y.
April 1—Central Illinois, at Hillsboro, Ill.
3—Northwestern O., at Napoleon, Henry Co., O.
May 1—Southern Kentucky, at Gainsville, Ky.
6—Albany County, N. Y., at Clarksville, N. Y.
6—Central Kentucky, at Lexington, Ky.
6-7—West. Ill. & Eastern Iowa, at Hamilton, Ill.
8-9—Muscatine District, at Muscatine, Iowa.
21—North Missouri, at McCredy, Callaway Co., Mo.
23—North-Eastern Wisconsin, at Hartford, Wis.
Oct. 21—National Convention, at Chicago, Ill.

In order to have this Table complete, Secretaries are requested to forward full particulars of time and place of future meetings.—ED.

Original Bingham Smoker Corner.

We have arranged a movable cold-blast or rag-burning attachment for all sizes of Bingham Smokers and will send it post-paid to any one on receipt of 25 cents, and the diameter measure of their smoker. This is the most perfect application of the cold-blast principle which can be made, and we have put it in the patent office that we may have the credit of the application, and some other improvements which we have made. Mr. Corey suggested the principle, and speaks of the soothing effects of cold smoke. All our new smokers will be provided with the movable cold-blast attachment until fully tested (no extra charge). They will burn anything combustible, and rags, &c., slowly. The attachment can be removed without injury or trouble should cold-blast prove of no practical value.

Address, **T. F. BINGHAM, Otsego, Mich.**

Open Letter to MR. JOHN G. COREY, Santa Paula, Cal.

Otsego, Feb. 18th, 1879.
Mr. Corey—Dear Sir: I have the pleasure of mailing to your address, this day, one of my large size bee smokers, in which I have arranged and developed the principle you have so generously donated to the bee-keepers of America. How far superior cold smoke may prove to that heretofore used, time and extensive use alone can determine. To facilitate such practical experiment without possible loss, should it prove of no real value, I have constructed the attachment contained and shown herewith, which can be used, or removed without trouble or expense, as may be desired.

I was pained to receive so unmerited a slur from a practical bee-keeper; one of a class of citizens whom it has ever been my greatest desire to benefit, and among whom it has ever been my pleasure and pride to associate.

I have a patent, it is true, covering my smoker, but it has not raised the price of smokers, neither has it debased their quality; but, on the contrary, has done just what the framers of the patent law designed it and all other real improvements should do, viz.: placed within easy reach of the user or consumer, the best quality of goods at a reasonable price.

Respectfully yours, **T. F. BINGHAM.**

To EXCHANGE.—Standard Langstroth hives (new, never used) for bees, 1st swarms, or in box hives. Address "WILL," care of AMERICAN BEE JOURNAL.

A club for the BEE JOURNAL may be sent all to one post office or to as many post offices as there are names in the club.

Those wishing a Premium Queen for getting up Clubs will now please send five subscriptions and \$7.50, and we will send them a choice queen in July.

Should any forget our address when on a visit to Chicago, they can easily procure it by consulting the City Directory to be found in almost every hotel and store.

The Rev. E. L. Briggs will deliver a lecture before the Bee-Keepers' Convention in Muscatine, Iowa, on May 9, 1879.

HEARING RESTORED. Particulars FREE. Verry & Harper, Madison, Ind.

Italian Queens or Colonies.

Eighteen years experience in propagating Queen Bees from imported mothers from the best districts in Italy. Persons purchasing Queens or Colonies from me will get what they bargain for. Send for circular.

WM. W. CARY,

3-tf Colerain, Franklin Co., Mass.

ITALIAN BEES.

50 Colonies of Italian Bees for sale cheap.

3-tf **WM. J. ANDREWS, Columbia, Tenn.**

LANGSTROTH HIVES,

Prize Section Boxes and Frames at Low Prices. Any other pattern of Hive made to order. Send for Price List, to

DUNN & STEVENS,
 Ref. { First National Bank, MONMOUTH, ILL.
 { T. G. McGaw, " " 3-6

Choice Northern Grown Seeds,

Bulbs, Roots and Plants for all purposes. Choice Queens. Garden and Apiarian Implements and Supplies, Books, Papers, &c., of all kinds. Prices reduced. Write for large Catalogue, or for what you want. Address carefully, **CHAS. F. LANE,** Milton Junction, Wis.

BEFORE

purchasing colonies with imported queens, or home-bred queens, Italian queens, COMB FOUNDATION, and implements in bee culture, write for circular with prices, and sample of comb foundation free, to **CHAS. DADANT & SON, Hamilton, Ill.**

CHEAP BEES,

In good, new, movable comb hives at \$5.00 each. Queens, hives, sections, &c., at reasonable prices, but not to give away. No chromos offered! Refer to list National Bank, and Express Agents.

E. A. GASTMAN, Decatur, Ill.

Herbert A. Burch & Co.'s Full Page.

Up with the Times.

Fully realizing the present low price of all commodities, and believing the low price of honey calls for the **LOWEST RATES** on **APIARIAN SUPPLIES**, we have reduced margins and cost of manufacturing, and invite the attention of bee-keepers to the following prices. The **QUALITY** of our goods is **UNEXCELLED**.

Italian Queens.			Prize Boxes.	
Untested Queens, each.....	\$1.00	Material for Prize Boxes, per 1000.....	\$5.75	
" " per half dozen.....	5.75	" " 2000 to 4000 " 	5.50	
" " dozen.....	11.50	" " 4000 to 8000 " 	5.25	
Warranted " each.....	1.50	" " over 8000 " 	5.00	
" " per half dozen.....	8.00			
" " dozen.....	15.00	Dovetailed Sections.		
Tested " each.....	2.50	Material 4 1/4 x 4 1/4 in.....	per 1000..	\$7.00
" " per half dozen.....	13.00	" " 2000 to 4000 " 	6.75	
" " dozen.....	25.00	" " 4000 to 8000 " 	6.50	
Selected tested Queens, each.....	3.50			
Imported " 	4.50	Our New Section.		
Nucleus Colonies.		Material complete.....	per 1000..	\$5.25
1 Nucleus Colony.....	\$3.00	" " for 2000 to 4000 " 	5.00	
6 " " 	16.50	" " 4000 to 8000 " 	4.75	
12 " " 	30.00	" " over 8000 " 	4.50	
Comb Foundation.		Bee Hives.		
10 pounds, per lb.....	53 cts	Langstroth hives 10 to 15, each.....	80	
25 " " 	52 cts	" " 15 " 25 " 	75	
50 " " 	50 cts	" " 25 " 50 " 	70	
100 " " 	48 cts	" " 50 " 100 " 	65	
500 " " 	45 cts	We furnish above with our new surplus arrangement, the best in use at these rates:		
Tin Separators.		Material for Langstroth hives and		
For Langstroth frame per 100.....	\$2.50	Supers, complete, 10 to 15, each.....	85	
" " " " 1000.....	24.00	" " 15 " 25 " 	80	
" American " " 100.....	2.00	" " 25 " 50 " 	75	
" Novice Section " " 100.....	18.00	" " 50 " 100 " 	70	
" " " " 1000.....	2.00	Burch's Honey Extractor.....	\$8.00	
" " " " 1000.....	18.50	Wax Extractor.....	3.25	
Broad Frames.		Shipping Crates for prize boxes, per 100	9.00	
Material complete, per 100.....	\$2.50	Burch's Queen Cage, per dozen.....	1.00	
" " " " 1000.....	22.00	" " " sample by mail... ..	12	
		Sample of comb foundation, prize box or section, each.....	6	

Above is a fair sample of our prices. We sell many other articles, however, which are useful to bee-keepers. Send for our descriptive 40-page Catalogue, which contains **VALUABLE INFORMATION** to all bee-keepers. After reading it, we feel sure that you will find it to your advantage to order your **SUPPLIES** for the Apiary of

HERBERT A. BURCH & CO.,
South Haven, Mich.



For Sale!

Sweet Home Raspberry.

AN APIARY, cheap.

FULL COLONIES, \$4 to \$8 for best.

QUEENS, June, July, Aug., \$1.50.

Bingham Smokers and Knives, at regular prices.

HIVES, Improved Langstroth, \$2.50, complete.

GLASS, for honey boxes, &c., per bx, \$2.50.

Extractors, Section Boxes, Comb

Foundation, Labor-Saving Registers, Bee-Veils, &c., at *bottom prices.

JAMES HEDDON,
DOWAGIAC, MICH.

ITALIAN BEES.

Price-current in gold, for the year 1879, of the Apicultural Establishment of L. R. Lambertenghi, Bergamo and Gorlago, Italy.

For the United States, North America.

	April, May and June.	July and August.	Sept. and October.
A—Fecundated Queens, pure race, with the necessary accompaniment of bees, post free to New York:			
For an order of 1 Queen.....	\$8 00	\$5 00	6 00
“ “ 3 “.....	7 00	6 50	5 00
“ “ 4 “.....	5 00	4 50	4 00
“ “ 5 “.....	4 00	3 50	3 00
“ “ over 5 Queens.....	3 50	3 00	2 00
B—Swarms, or colonies, post free to New York:			
For an order of 1 swarm or colony.....	11 00	10 50	9 50
“ “ 2 to 5 colonies, each.....	9 00	8 00	7 00
“ “ over 5 “.....	7 00	6 00	5 00
C—Common hives, post free to N. Y.:			
For an order of 1.....	14 00	14 00	14 00
“ “ 2 to 5, each.....	12 00	12 00	12 00
“ “ over 5, “.....	10 00	10 00	10 00
D—Hives with movable combs, post free to New York:			
For an order of 1.....	16 00	16 00	16 00
“ “ from 2 to 5, each.....	14 00	14 00	14 00
“ “ over 5, “.....	12 00	12 00	12 00

The transport post free to New York, from thence continues to its destination at expense of the person who gives the order. For an order of ten articles an *eleventh* is included gratis, as a recompense in case of eventual loss during the voyage. An order letter A for more than 25 Queens at a time is entitled to a discount of 5 per cent., and one for more than 50, a discount of 10 per cent. The necessary nutrition for the voyage and packing is included in the price. I guarantee for the purity and fertility of the Queens that I send, it being my interest to merit your commands. The order must be accompanied with its relative *sum anticipated*, or at least a half for those given a month or two back, paying the other half at the appointed date before the exportation. Postoffice orders, either international or consular, offer the easiest and securest way of payment. In order to fulfil everything according to the wish of those who honor me with their commands, I beg the same to forward me as early as possible their orders, with their precise address, that of the post office, and nearest railway station or sea port, indicating at the same time the commission agent with whom they wish their goods to be left on their arrival in New York, to be reforwarded to their destination. With profound respect,

LUIGI RUGGERO LAMBERTENGHI.

For COMFORT and HEALTH every garden should supply its owner with FRUIT; it is the foundation and beginning of happiness; it makes the countenance brighten, the world look gay, delightful and sunny; it makes happy homes, and healthy, cheerful people to live in them.

For hardiness, easy culture, quality of fruit, early and constant bearing, there is none that equals the *Black Raspberry*. It has been wonderfully improved by cultivation and crossing.

In 1873 I produced a seedling of Lum's Everbearer, which is still growing near my front door. In 1874 and since, it has been admired by all visitors for the great amount and large size of its fruit.

Having the peculiar *sweetness* of its parent, it makes it the most delicious berry for the table, preserving or jelly. It being the *finest* berry grown, makes it the best for canning and drying.

The SWEET HOME canes grow upright and stocky; but few thorns; increased from tips; never has winter-killed; ripens two weeks later than Doolittle, and continues till blackberries ripen; the fruit continues to hold its large size till the last picking. It bears such *immense* crops that the canes must be cut thoroughly back or tied up, or it will be as one fruit man said when beholding it, "*Loaded to the ground*." We have picked from one cane of SWEET HOME, one thousand and fifty (1,500) berries, filling 3 quarts; there were two more canes from the same root.

The clusters, as seen in the colored fruit-plate of SWEET HOME, average from 25 to 30 berries each. Their large size and firmness, together with the closeness of the berries in a cluster on the outside of the bush, enables me to get them picked for one cent less per quart than other varieties.

The editor of THE AMERICAN BEE JOURNAL, or any of the following persons, may be written to in reference to my reliability, or qualities of SWEET HOME:

Being a general merchant of New Boston, Ill. I have handled many varieties of raspberries. The past season I have sold, among others, the SWEET HOME, and found it *superior* to all others in *size, flavor and firmness*. Their firmness will enable them to be shipped a long distance with less shrinkage and *keep one day longer* in market than any other variety we have handled. I have spoken for Mr. Palmer's whole crop of SWEET HOME raspberries next year.

C. A. BALLARD.

We, the undersigned, members of the New Boston Cornet Band, on the 4th of July last visited the berry plantation of Sweet Home; we there saw many varieties, our eyes and appetites doing justice to test their variations. The *stocky canes of Sweet Home* were loaded to the ground with the *largest, best flavored berries we ever saw*.

O. H. BELL, F. SWERTFEGER, W. B. DANFORD, ED. ALYEA, MOZART DANFORD, GEO. SIGNOR, WM. HUNT, J. BELL, LLOYD MYERS.

I grow and handle fruit; have ordered 1,000 plants of SWEET HOME. Their flavor, size, firmness and *freedom from bleeding* (the less bleeding of juice the longer they will keep from souring), will make them *very valuable* for shipping and handling.

CAPT. H. B. SOUTHAIRD.

T. McWhorter, of Aledo Nursery, this county, in his circular of nursery stock says: "*Sweet Home—Valuable; well tested on my own grounds.*"

The Sweet Home raspberry has done finely; bush grows *thrifty and stocky*; berries *very firm*; ripens from 12th to 31st of July; *size decidedly larger than any other black cap* I have seen. Should call it a fine berry for marketing. E. W. BLEWSTER, Kingston, Plymouth Co., Mass.

The following is from the father of bee-keeping in this county. He runs from 200 to 300 colonies of bees, also considerable fruit:

I never saw the Sweet Home equaled in size of berry. The bushes were *loaded to the ground* with the *most delicious* finely flavored berry I ever ate. I shall set largely of Sweet Home this season. Eliza, Mercer Co., Ill.

JESSE BOGART. We sold all the plants we had to spare last season, and now offer you by mail 1 strong plant for 25c.; 12 for \$1.50; 100 for \$5.00; by express, 1,000 for \$30.00. Colored Fruit-Plate 9x11 of Sweet Home for 20c.

Doolittle, Mammoth Cluster, Miami, Seneca, Davidson's Thornless, Golden Thornless, 10c. each, 60c. per dozen, by mail; \$1.50 per 100, \$10.00 per 1,000 by express.

Ganargus, Lum's Overbearer, Philadelphia, Brandywine, Turner, 15c. each, \$1.00 per dozen, by mail.

Address, D. D. PALMER, New Boston, Ill.

Send Postal Card for descriptive List and Prices.



Marblehead Mammoth Cabbage.

There being a good deal of seed in the market raised from very poor stock, which must fail to give satisfaction, having been the original introducer of the Giant Cabbage, which when raised from the right strain of seed, under proper cultivation, has been grown to weigh over 60 pounds to a single plant, and 60 tons to the acre, I now offer to the public seed that has been raised by myself, with peculiar care, all of it from extra large, extra solid heads. The Marblehead Mammoth is not only the largest, but is one of the most crisp and sweetest of all varieties of the cabbage family, as will be seen by extracts of letters to be found in my Seed Catalogue, where my customers state that they have raised cabbages from my seed that have weighed 40, 45 and 50 lbs. each. Full instructions for cultivation sent with every parcel of seed. Seed per lb., \$5.00; per ounce, 50c.; per half ounce, 25c. My large Seed Catalogue sent free to all applicants.

JAMES J. H. GREGORY, Marblehead, Mass.

EUREKA.

Go West, young man; go West! where you can get the best Foundation at lowest rates: 5 to 50 lbs., cut any size not larger than 9x18, 50c. per lb.; wax in lots of 25 lbs. or more, worked up at 20c. per lb.; less than 25 lbs., at 25c. Also have 40 colonies of Bees, in frame hives, for sale at \$4.00.

P. J. FARR, Independence, Mo.

The American Young Folks

In its 5th year, an Illustrated 16-Page Paper for Boys and Girls, Published by

HUDSON & EWING, TOPEKA, KANSAS.

Over 10,000 Teachers of Public Schools, from Pa. to Cal., pronounce it the best and cheapest paper for Boys and Girls. It is pure and elevating in character, bright, instructive and interesting. Sent postage paid, one year, to any address for 50c. Sample copy free.

SECTIONS, \$6.00 per thousand.

F. L. FURBISH,
Grand Rapids, Mich.

BEST OFFER OUT.

ISAAC F. TILLINGHAST, Seedsman, Factoryville, Pa., offers to send a copy of the Latest and Best Book on Practical Gardening, entitled "Vegetable Plants," and your choice of seeds from his list to the amount of fifty cents, all postpaid for fifty cents. The book alone is worth many times the money, and the seeds are warranted fresh and genuine. Send your address on postal card for his Illustrated Catalogue, which is free.

1879. Italian Queens, Nuclei and Colonies, 1879.

Bred and reared in full strong Colonies. Queens and Drones from selected mothers.

Single Queen, Tested.....\$2 00
Single Queen (laying), Untested..... 1 00

On all orders for 10 or more Queens I will pay express charges, except to States west of Rocky Mountains.

1 Langstroth frame Nucleus.....\$2 00
2 " " "..... 2 50
3 " " "..... 3 00
8 " " " Colony..... 6 00

Nuclei and Colonies in nice white pine hives. One Dollar more when containing Tested Queen. Send money by P. O. Order or Registered Letter.

Orders promptly filled and safe arrival guaranteed.

Address, W. P. HENDERSON,
3-6 Murfreesboro, Tenn.

CLETHRA ALNIFOLIA,

(Or, SWEET PEPPER),

FOR BEE PASTURE.

Always known to be good by the Bees, but recently admitted to be the best by MAN. The honey is white, thick and very sweet. Perfectly hardy, blooms at 1 to 8 feet high, from July to Sept., when other flowers are scarce; grows where corn or the hazel-bush will; transplants safely in this latitude in April and May, or from October to December.

Prices—Small layers, 6 to 12 inches long, by mail, \$1.50 per doz., or \$10.00 per 100; or blooming plants, 3 for \$1.00, or 12 for \$3.00. By express, for strong layers and blooming plants, \$3.00 per doz., \$10.00 per 100, or \$50.00 per 1,000. Remit by bank check on some Boston bank, postal order on postmaster at Boston, or registered letter. Illustrated Circular and Reading Nursery Catalogue free by mail. Address,

3-4 JACOB W. MANNING, Reading, Mass.

Material Ready to Nail!

For Prize Boxes, sawed from white basswood or pine, one side planed smooth by machine, to fit glass 5x6 inches or less:

In lots of 500 to 5,000, per 1,000.....\$7 00
more than 5,000, per 1,000..... 6 00

Material for Cases, according to size; material for Improved California Boxes, sides put together, according to size.

SEYMOUR RUGGLES,
3-11 Saratoga Springs, N. Y.

DUNHAM FOUNDATION MACHINE!

And also everything of any practical value in the Apary: Hives, Sections, &c. Samples of Foundation made upon the above machine FREE. Circulars sent on application.

FRANCES DUNHAM,

Depere, Brown Co., Wis.

DO YOU KEEP BEES

Or expect to? Then subscribe for the BEE-KEEPERS' EXCHANGE, a spicy, illustrated monthly, edited by a practical Bee-keeper. Only 75c. a year, post-paid. Sample copy free. Address

3 J. H. NELLIS, Canajoharie, N. Y.

BEFORE

purchasing colonies with imported queens, or home-bred queens, Italian Queens, COMB FOUNDATION, and implements in bee-culture, write for circular with prices, and sample of comb foundation free, to CHAS. DADANT & SON, Hamilton, Ill.

ITALIAN QUEENS,

1879.

Price, April, May and June.....each, \$3 00
 July, August and September....." 2 00

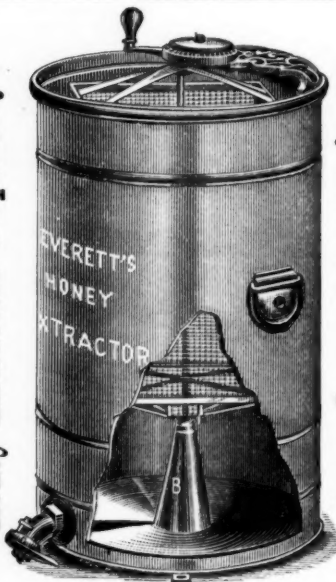
STANDARD OF PURITY.

All Queens guaranteed to be of good size, vigorous and producing workers large and uniformly marked with three distinct yellow bands, of fine golden color.

We shall have a shipment of fine *Tested* Queens, from Italy, in April, selected for our Apiary.

No Circulars. [2-17] A. F. MOON, Rome, Ga.

Honey Extractors a Specialty!



Honey Extractors a Specialty!

SENT FREE, a 16-page illustrated circular and price list of honey cans, honey extractors, wax extractors, hives, section boxes, smokers, knives, honey jars, something new, Italian bees and queens, &c.

3tf EVERETT BROS, Toledo, O.

VALUABLE INFORMATION FOR THE FARMER.

Next to the system of rotation in crops, the most important discovery yet made in Agriculture. Without any outlay of money, an increase of from 25 to 50 per cent. can be obtained in the crop of **MARKETABLE**

POTATOES

Proved by two years' experience. *Costs nothing* but time during Winter or early Spring to prepare the seed. Full directions sent for \$1, payable after trial, at maturity of crop. ISAAH T. CLYMER, Quakertown, Bucks Co., Pa.

Stabilimento D'Apicoltura

OF

PIETRO PILATI.

Strada Stefano 88, Bologna, Italy.

	April, May, June.	July, Aug. Sept., Oct.	
1 Queen.....	11.50 francs.	9.50 francs.	6 francs.
6 ".....	66 " 55	35	
12 ".....	130 " 108	68	

I guarantee purity, prolificness and safe arrival. Should any die en route, they will be replaced. The value of a franc is 13 1/2 cents in gold. I solicit American orders.



IF YOU WANT



Supplies for the Apiary, send for our price-list before making your purchases for 1879. If you want

Comb Foundation of Best Quality,

and for **less money** than heretofore, send for our price-list and learn how 'tis done. We sell **GLASS** for honey-boxes,

Tin Separators, Bee-Smokers, Honey Extractors, Wax Extractors, Honey Knives, Prize Boxes, Sections, Bee Hives, Comb Foundation,

and many other things, all at **astonishingly low prices.**

Italian Queens, Nucleus Colonies and Full Colonies of Italian Bees,

of the **CHOICEST STOCK** in the country, will be furnished in any quantity, at the lowest living prices.

Our **CIRCULAR** contains much valuable information, and tells you the **best methods** of introducing queens, artificial swarming, how to secure the

MOST SURPLUS HONEY,

and how to obtain the **HIGHEST PRICE** for the same. Our arrangements are such that we shall be

HEADQUARTERS

for apiarian supplies during 1879. If you have any doubts on this point, just send us your name on a postal card, and our circular will be forthcoming, showing you how to **SAVE MONEY** in buying supplies.

Our Motto: The Best Goods at the Lowest Prices.

Address, **HERBERT A. BURCH & CO.,**
 1-tf South Haven, Mich.

VEGETABLE AND FLOWER SEEDS

WE SELL **EVERYTHING** FOR THE

GARDEN

Descriptive Catalogues of 175 pages sent Free

PETER HENDERSON & CO.

35 Cortlandt St., New York.

FLOWER AND FRUIT PLANTS

BINGHAM'S

Bellows Smoker!

(Patented January, 1878.)

Nothing used in an apiary so valuable, so cheap, so handy and essential to success.

Burns any sound, dry wood, and will last ten years.

Extra Large size. 2 1/2 inch.	\$1 75
The Standard " 2 1/2 "	1 50
Small " 1 3/4 "	1 00

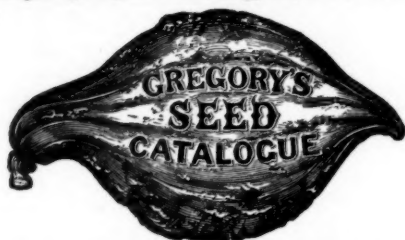
Our Dollar Smokers contain our new improvements, and excepting our larger sizes, are the best smokers ever made. Price 50 cents each by the half-dozen. Can be mailed to Canada.

Send for our Knife and Smoker Circular. Manufactured only by the inventor, **T. F. BINGHAM,** Otsego, Allegan Co., Mich.

HIVE REGISTER!

will tell you at a glance what your bees are doing. Cheap. Sample and prices for a 3 cent stamp.

J. V. CALDWELL, Cambridge, Ill.



My annual Catalogue of Vegetable and Flower Seed for 1879, rich in engravings, from original photographs, will be sent free to all who apply. Customers of last season need not write for it. I offer one of the largest collections of vegetable seed ever sent out by any seed house in America, a large portion of which were grown on my six seed farms. Printed directions for cultivation on each package. All seed warranted to be both fresh and true to name; so far, that should it prove otherwise, I will refill the order gratis. The original introducer of the Hubbard Squash, Phinney's Melon, Marblehead Cabbages, Mexican Corn, and scores of other vegetables. I invite the patronage of all who are anxious to have their seed directly from the grower, fresh, true and of the very best strain. **New vegetables a specialty.**
JAMES J. H. GREGORY,
12-5t Marblehead, Mass.

1865.— THE —1879.

HONEY HOUSE.

C. O. PERRINE, 54 & 56 Michigan Av., Chicago.

As a Manufacturer of

COMB FOUNDATION,

I can say my goods have given entire and universal satisfaction. The ruling low prices were made by me, and any one desiring any considerable quantity would do well to consult me before buying elsewhere. 2t Market price for Beeswax.



ITALIAN BEES FOR 1879.

This is my 13th year with Italians. I will sell pure tested Queens for \$5.00, till July 1st. Full Colonies in Langstroth hives, \$10 to \$12.00. Nuclei, with 3 full frames, \$6.00. Several leading varieties of Poultry. No dollar or unwarranted queens.
2-tf R. M. ARGO, Lowell, Ky.



Pure Italian Queens and Colonies
For Sale for 1879.

The best is the cheapest at any price. Circular sent free. Address, D. A. PIKE, Box 19, Smithsburg, Washington Co., Md. 2-5

SMALL FRUITS

13 pages. **Very instructive. FREE TO ALL** applicants. Address **PURDY of Palmyra, N. Y.**

COFFINBERRY'S

Excelsior Honey Extractor.

This Extractor takes any size of frame smaller than 12x20. Larger sizes will be made to order if required. For extracting 4 frames at one time, add \$2.00

It is made entirely of metal, and is the best Honey Extractor in the market. It is light, but has attachments for fastening down to a platform. It can be instantly taken to pieces for cleaning, having no screws to take out, nor heavy pieces to lift.

Some of its advantages are as follows: The lower end of the comb basket shaft does not revolve in the honey below, even when 60 or 70 lbs. may be there!

The Comb Basket having vertical sides, insures the extracting power alike for top and bottom of frames.

An over-motion and strong gearing is essential to both ease of operation and effective work.

The handles are strong and attached near the centre, for ease in carrying.

The tin covers close the machine up tightly, keeping it free from dust and dirt when not in use.

It is provided with a small comb-holder for extracting pieces of comb or partly-filled sections. It has a strainer elevated some three inches above the bottom of the extractor, and entirely covering the canal leading to the honey-gate. This "strainer" can be instantly removed, cleaned and replaced.

The honey receptacle has capacity for 60 or 70 lbs of honey, where it may be allowed to ripen before drawing off, if desired.

THE EXCELSIOR HONEY EXTRACTOR combines all the advantages of other Extractors, and is the cheapest thoroughly practical machine ever yet made.

The Comb Basket of this Extractor is made to take either two or three combs, and either will be furnished at the same Price, \$12.00, crated and delivered at railroad depot or express office.

C. C. COFFINBERRY, Chicago.



Bee Hives. LANGSTROTH

AND

MODEST,

Single or Double Story.

Oatman's No. 2 and 3 Honey Boxes, Section Frames,

ITALIAN QUEENS,

&c., at bottom rates.

See advertisement in the March number of the AMERICAN BEE JOURNAL.

J. OATMAN & SONS,

5-tf

Dundee, Kane Co., Ill.

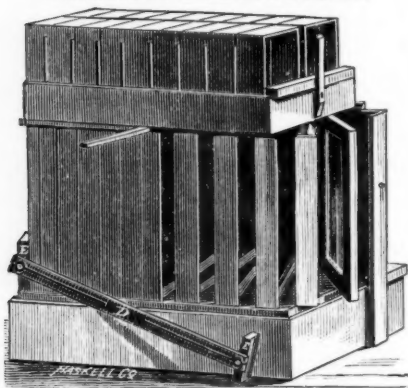
For 75 Cents,

I will send Bee-Keepers' Magazine for 1879, Post-paid.

Smokers, Bee-Keepers' Text-Book, Cook's Manual, and Apian Supplies, at regular prices.

2-5 E. H. WYNKOOP, Catskill, Greene Co., N. Y.

ARMSTRONG'S



IMPROVED

CENTENNIAL BEE HIVE.

It is the best and most completely arranged hive for all general purposes now in existence. It has been thoroughly tested in every part, and is warranted to give entire satisfaction when given a fair trial. Here is what a practical bee-keeper, of Winchester, says of it:

Winchester, Scott Co., Ill., Feb. 8, 1879.

Mr. Elvin Armstrong, Jerseyville, Ill.:
The hive came all right, and I am much pleased with it. Of the two general forms of hives, the Langstroth and the Huber, I think the Huber, or standing frame, must eventually prevail, for the tendency seems to be to wintering on summer stands (certainly the most convenient way), and these hives are so convenient to winter-pack between the frames and case. Yours is the most convenient form of this hive that I have observed. The convenience of decreasing and increasing the size of the brood-chamber, without extra division boards; the simplicity and compactness of frames; but above all, the access allowed to brood-chamber without disturbing the surplus receptacles, give it a great advantage over any other hive that I know of. I do most conscientiously recommend it as the best hive.

Yours, respectfully, WM. CAMM.

Send for my new 24-page pamphlet.
Address, **ELVIN ARMSTRONG,**
Jerseyville, Illinois.

Friends, if you are in any way interested in

BEES OR HONEY

We will with pleasure send you a sample copy of our

Monthly Gleanings in Bee-Culture,

with a descriptive price-list of the latest improvements in **Hives, Honey Extractors, Artificial Comb, Section Honey Boxes,** all books and journals, and everything pertaining to Bee Culture. *Nothing patented.* Simply send your address on a postal card, written plainly, to A. I. ROOT, Medina, O.



JOYFUL News for Boys and Girls!
Young and Old!! A NEW INVENTION just patented for them, for Home use!

Fret and Scroll Sawing, Turning, Boring, Drilling, Grinding, Polishing, Screw Cutting. Price \$5 to \$50.

Send Stamp and address

EPHRAIM BROWN, Lowell, Mass.

1171

"Valentines' Italian Bee-Yard"

ESTABLISHED 1867!

Send for new Price-List of Imported and Home-Bred Queens, Comb Foundation, Hives, Section Boxes, Extractors and Bee-Keepers' Supplies. Also, high-class Poultry. Queen-breeding a specialty. First Premiums awarded us at St. Louis Exposition for 1873, on best Italian Bees and Honey.

VALENTINE & SON,

CARLINVILLE, ILL.

1-6

CHEAP HIVES!

Material, planed on both sides, for a one-story, 8-frame Langstroth, movable-frame hive, with 7-inch cap, including all of material for a complete hive, prepared ready to nail, for 50 cents each.

Nailed and finished complete, 75 cents.

Other sizes proportionally low.

We have improved machinery, specially adapted to this manufacture, and are able to get out a No. 1 hive at these low prices. (THEY ARE NOT POOR BECAUSE CHEAP.) We will also give a liberal discount from these prices on orders of 25 or more at a time. Dove-tailed honey and section boxes VERY CHEAP.

Send for Price-List.

LEWIS & PARKS,

successors to G. B. LEWIS,

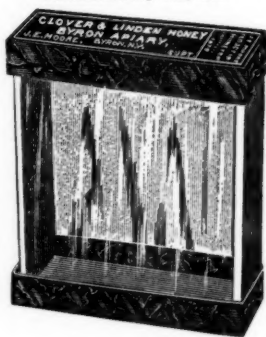
Watertown, Wis.

12-m6

J. E. MOORE'S PERFECTION HONEY BOX.

Patented May 7th, 1878.

CIRCULARS FREE,
Address, BYRON APIARY,



J. E. MOORE, SUP'T.,
BYRON, N. Y.

BARNES' PATENT Foot-Power Machinery

CIRCULAR and

SCROLLSAWS



Hand, Circular Rip Saws for general heavy and light ripping, Lathes, &c. These machines are especially adapted to **Hive Making.** It will pay every bee-keeper to send for our 48 page Illustrated Catalogue.

W. F. & JOHN BARNES,
Rockford, Winnebago Co., Ill.
June 1

Bees!--1879---Bees!

Full Colonies, Nuclei and Queens Cheap. Supplies furnished. Satisfaction guaranteed. Write for particulars. **S. D. MCLEAN & SON, Cuileoka, Maury Co., Tenn.**

2-7

HEAD-QUARTERS!

We wish thus early, to inform our friends and patrons that we are in the field and

READY FOR BUSINESS!

For the Season of 1879 we shall be the **HEADQUARTERS** for Langstroth and Modest Hives, Prize Boxes, Separators, and all the necessities in the bee-keeping line. As we are just a **LITTLE AHEAD** of ALL **COMPETITORS** in producing a fine article of **COMB FOUNDATION**, we shall lead the trade!

Make a note of these points, and write for our **NEW PRICE LIST**.

J. OATMAN & SONS,
Dundee, Kane Co., Ill.

THE VOICE OF MASONRY AND FAMILY MAGAZINE FOR 1878.

Will be edited as heretofore; will contain 900 pages of Masonic and Family Literature: will be finely illustrated, and will furnish a greater variety of articles from a greater number of contributors than has appeared in any preceeding volume. No proper efforts will be spared in making it, beyond question, the most attractive and valuable volume of a Masonic and literary magazine ever published. Published monthly, at \$3.00 per annum, in advance. Single copy, 30 cents. Address **JOHN W. BROWN**, Publisher, room 12, 182 S. Clark St., Chicago, Ill.

GEORGE GRIMM,

OF
JEFFERSON, WISCONSIN,

hereby respectfully gives notice to the public, that his Circular and Price-List of Italian Bees for the year 1878-9, is ready, and that he is selling at his usual low prices.

10-6

1879.-H. ALLEY'S-1879.

Circular and Price-List.

Our Circular, containing information valuable to any bee-keeper, will be ready in December, and sent free to all applicants. It will tell you about Italian and Cyprian bees, one-dollar queens, the Massachusetts bee-hive, section boxes, comb foundation, bellows smokers, how to introduce queens, and in fact will tell you something about almost everything used about the apiary.

I shall use white poplar wood for our section boxes in future. This wood makes the neatest cap in use. Send 3c. stamp for sample. **H. ALLEY,**

12-tf

Wenham, Essex Co., Mass.

AT REDUCED RATES!

1879—Early Italian Queens.—1879.

Imported and home-bred Queens, Nucleus Colonies, Full Colonies. For quality and purity, my stock of Italians cannot be excelled by any in America.

If you want the best Movable-Comb Bee-Hives, suited to the Southern climate, Honey Extractors, Bee-Veils, Smokers, Feeders, Gloves, or bee-fixtures of any kind, send for my new Circular. Address,

1-6

Dr. J. P. H. BROWN, Augusta, Ga.

Italian Queen Bees

FOR 1879.

I shall breed Italian Queens for the coming season, from imported mothers of undoubted purity. Safe arrival and purity guaranteed in every shipment. Prices very low. Circulars sent free. Address,

D. P. MYERS,

West Salem, Wayne Co., Ohio.

apyl

In the Market again with 100 Colonies of

ITALIAN BEES,

with young, fertilized Queens, less than 60 days old, at \$3.00 per Colony. We shall continue to rear Queens through the season as usual.

Tested Queens, per dozen\$25 00
Untested Queens, " 10 00

Safe arrival guaranteed. Address,

D. STAPLES & SON, Columbia Apiary,

Columbia, Tenn.

1-6

BEFORE PURCHASING

Supplies for your Apiary, send a postal card with your name (and if you will do us the kindness, those of bee-keeping neighbors) for our illustrated circular of Apiarist's Supplies, of every description; sample Sectional Box, and Comb Foundation made on the

Dunham Foundation

machine, which is the latest improvement in that line. We wish to place these samples before

EVERY READER

of this JOURNAL, and hence offer them **FREE**. Just send your name at once. Special attention given to rearing Italian Queens and Bees.

We have secured the general agency of the above machine.

The highest price paid for Beeswax.

1-tf

J. C. & H. P. SAYLES, Hartford, Wis.

Foundation Machines.

12 inches wide.....\$40 00
9 inches wide..... 30 00
6 inches wide..... 25 00

Every machine warranted. On receipt of 10 cents, I will send a sample of the foundation made by the machine.

12-tf **JOHN BOURGMEYER,** Fond du Lac, Wis.

SPERRY & CHANDLER'S

NORTH STAR HIVE.

There are now over 1,000 of these Hives in use in different parts of the United States, and wherever tried they are pronounced the best Hives before the public for all general and special purposes. We are now prepared to promptly fill all orders for the North Star, or Improved Langstroth, with our patent Manipulating Side. Samples of surplus honey taken from the North Star, as also our hives in use, may be seen at the American Bee Journal office. Send for illustrated circular—correspondence solicited.

Address

SPERRY & CHANDLER,

974 W. Madison Street,

Or AMERICAN BEE JOURNAL, Chicago, Ill.

8-tf



THIS NEW ELASTIC TRUSS

Has a Pad differing from all others, is cup-shaped, with Self-Adjusting Ball in center, adapts itself to all positions of the body, while the BALL in the cup PRESSES BACK the INTESTINES JUST AS A PERSON WOULD WITH THE FINGER. With light pressure

the Hernia is held securely day and night, and a radical cure certain. It is easy, durable and cheap. Sent by mail. Circulars free.

Eggleston Truss Co., Chicago, Ill.,

8yl

J. S. Woodburn, Newville, Pa., after two years' use, says:

"I find myself quite equal to cutting out from 12 to 15 hives per day. Am now engaged on a job of 100 hives, 1,000 frames, 5,000 sections and 500 broad frames, and expect to accomplish it all on the Combined Circular and Scroll Saw."

Address,

W. F. & JNO. BARNES, Rockford, Ill.

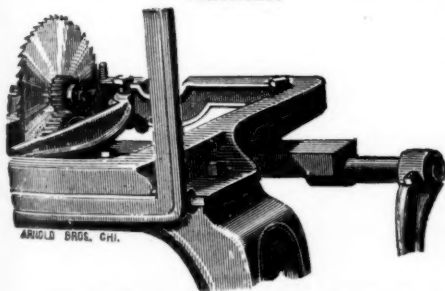
Combined Circular and Scroll Saw for Hive, Box and Frame making.



This cut shows the Combined Circular and Scroll Saw. The section views show the table arranged for box and frame work, and the crank attachment.

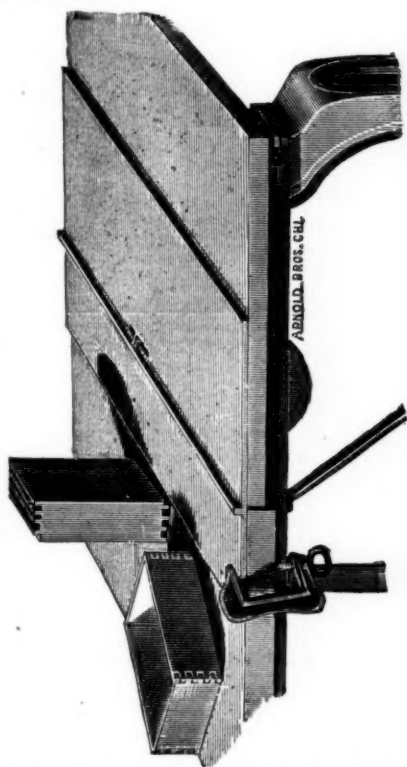
Price of the circular and scroll saws combined.	\$40 00
" crank attachment.	5 00
" boards with gauges for frame and box work	75
" cutter heads, each.	1 50
" circularsaw without scroll saw attachm't.	35 00

Crank Attachment for the Combined Machine.



The cut shows the manner of attachment. This gives a slow but powerful motion to the saw, and soft wood two inches thick can be ripped quite easily. This attachment is desirable to those making bee hives, frames, section boxes, etc.

Showing the Combined Machine, Arranged for making Tongue and Groove Joints for Boxes, Drawers, Frames, etc.



This cut shows the table of the Combined Machine arranged with a cutter-head to tongue and groove blocks or bundles of thin stuff for frames and boxes. If the stuff is in blocks the crank attachment serves an effective purpose in ripping them, each four pieces making a frame.

The above cut shows a thin board $\frac{1}{4}$ inch thick, placed on the table with a rib fastened to it with brads. This rib is of the same width as the cutter and is placed from the cutter the width of the cutter. This rib and board are so easily made that we do not furnish them unless especially ordered. The price of them is 75 cents. If different width cutters are used, a board with a corresponding rib can be made for each cutter. This way of making the joints for boxes is largely used by Bee men, Fruit men, and many articles of manufacture in different lines of trade.

This way of cutting the tongue and groove joints for box and frame work is cheap, effective and rapid. Different width cutters can be used, varying the widths of the tongues and grooves as desired. While cutters can be ganged together with washers between them, the expense is about equal to our complete machine, simply for the shaft and cutters, and then no change can be made in the width of tongue and grooves to correspond with the different kinds of material, and boxes to be made. When ordering cutters for this box-work, please mention for what use they are wanted, besides giving width, and we will send those that are most suitable.

Address, **W. F. & JOHN BARNES,**
Rockford, Winnebago Co., Ill.

SHUCK'S UNIVERSAL BEE HIVE!

Claims the Atten-
engaged or inter-



tion of every one
ested in Bees.

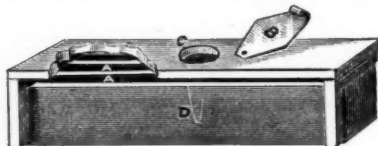
THE HIVE

Is devised by a practical bee-keeper for PROFITABLE use; double walls, with either dead air space or chaff packing; inside walls are porous, allowing all moisture to escape from the brood chamber, keeping it perfectly dry, sweet and wholesome, even with unsealed stores; both sides are removable; frames hung upon metal supports on the top of the end walls (not in rabbets) and are easily handled; brood chamber large or small, as desired, and may be as complete with one frame as with a dozen; space for 96 pounds surplus honey within six inches of the brood nest. No colony need be lost during the winter months in this hive. No melting combs in this hive during the hot weather. Positively

THE BEST HIVE BEFORE THE PUBLIC.

APIARY RIGHTS, \$5.00. TERRITORIAL RIGHTS FOR SALE ON EASY TERMS.

SHUCK'S BOSS BEE FEEDER,



Patented June 11, 1878,

Removes all the obstacles in the way of feeding, by its simplicity, cheapness, and its adaptability to the purposes required. It is to be placed at the entrance outside the hive, and supplied with sugar syrup, or syrup and flour any time in the day, without annoyance from bees, either to the bee-keeper or the colony being fed; no bees can reach the food except from the inside of the hive. Every bee-keeper appreciates the advantage of feeding to supply short stores for the colony, or to stimulate and encourage breeding, previous to an expected flow of honey.

Prof. A. J. Cook says: "I think very highly of your feeder, and only find fault with the price."

G. M. Doolittle says: "You are just a shouting when you say, 'I trust my Boss Bee Feeder will please you.' It is the best bee-feeder I ever saw, in ease of feeding, simplicity and for general use. When I see a good thing I like to say so. It is worth no less because it is patented."

D. D. Palmer says: "I received your Boss Bee Feeder and would say of it, that I like it better than any I ever saw; in fact, it seems to be all that could be desired. It is all you claim for it, being so convenient to get at, and being so readily filled without disturbing the bees or being to the trouble of taking off the cover."

SAMPLE, BY MAIL, 30 CENTS.

Address,

J. M. SHUCK,

DES MOINES, IOWA.